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THE PRACTICE OF MEDICINE IN THE MIDDLE AGES.¹

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THE science and practice of medicine owes its origin to Greek thought and activity, more especially as developed by Hippocrates ("the father of medicine"), Aristotle, Herophilus and Erasistratus. Several centuries later when the Romans had gained the domination of the world, Greek physicians attained great distinction in Rome and still continued to contribute most to the advancement of medicine. During this Græco-Roman period (146 B.C.-476 A.D.) many notable Greek physicians wrote and practised, including Asclepiades, Dioscorides and Archigenes, culminating with the great Galen (131-200 A.D.) whose treatises on medicine number over a hundred and contain a complete and systematic account of Greek medicine. The anatomy, physiology, pathology and therapeutics of Galen dominated medicine for more than fourteen centuries. The key to the history of medicine in

the Middle Ages is always the influence of these early Greek writers.

The commencement of the Middle Ages is arbitrarily dated from the year 476 A.D. when the Western Empire of Rome finally fell before the hordes of German tribes under the leadership of Odoacer who banished from Rome in that year the last of the Emperors of the West. The German conquerors were ignorant, simple, vigorous people with no taste for anything except fighting, eating and drinking; they knew nothing and cared nothing for the art, literature and science which had been created by the Greeks and adopted by the Romans. Thus, at the commencement of the Middle Ages the western world fell back into a condition similar to that in which it had been before the Romans conquered and civilized it. Out of this chaos arose the Church of Rome which gradually began to undertake the duties which the Roman Government had previously performed, such as the keeping of order, the trial of lawsuits, the dispensing of charity and the promotion of education. During the sixth century monasteries multiplied in Europe and were the seats of what learning and culture there was; medicine was neglected, however, and in its place grew up a cult of faith-healing, an implicit belief in the miraculous healing powers of the saints and

¹ Read at a meeting of the Western Australian Branch of the British Medical Association on June 17, 1925.

of holy water. The earliest French writer, Henry de Mondéville (1260-1320) says that in his time many patients thought all diseases except wounds and fractures came from God and therefore refused to be treated by ordinary practitioners or by earthly means. "These fall into the hands of fraudulent monks, hermits, recluses and the like who pretend to cure them in a supernatural manner by holy water, prayers and incantations." Incantations were much in use and firmly believed in; two examples from Marcellus (480 A.D.) will illustrate their absurdity: "If a man's nose bleeds, whisper in his ear on the same side '*socsocam sykyma*' thrice nine times and you may still go on saying it . . . Toothache, if it occurs on a Tuesday or Thursday and if the moon is waning, may be cured by repeating seven times '*argidum margidum stargidum*'." Just at the time that Pope Gregory the Great (about 600 A.D.) was strengthening the power and influence of papacy in Rome, a young Arab camel driver named Mohammed was devising a new religion in Arabia which was destined to spread with astounding rapidity and to become a great rival to Christianity. In the year of Mohammed's death, 632 A.D., there issued from the deserts of Arabia a people not entirely uncivilized, though classed by their more cultured neighbours as barbarians, armed with the tremendous forces of religious enthusiasm. Within a century they had annihilated one of the great existing empires, Persia, and had stripped the eastern Roman Empire of her fairest provinces. This display of physical vigour was followed by an intellectual activity hardly less wonderful. A Byzantine emperor was astonished to find that the right of collecting and purchasing Greek manuscripts was among the terms dictated by the victorious barbarian and that an illustrated copy of Dioscorides was the most acceptable present he could offer. In the year 762 these Mohammedan Arabs established a new capital on the Tigris near the site of ancient Babylon and this city of Bagdad became famous for its wealth, magnificence and learning and in the ninth century was the richest and most splendid city in the world.

Here when the Eastern Caliphate (750-1250) was under the sway of the Abbasides who were friends of learning and science, the works of Hippocrates, Galen, Dioscorides and other Greek classics were translated into Arabic. Thus did these "barbarian" Arabs rescue from oblivion the medicine of Greece. In an age when no Christian monarch with the rare exceptions of Charlemagne and Alfred the Great troubled himself in the slightest about the education of his subjects or the progress of science, we find caliph after caliph and vizier after vizier establishing schools and libraries and filling their courts with physicians and philosophers. The fees paid to successful Arabian court physicians were often on a princely scale; and amongst the items of the income of Gabriel Backtishua (about 800) which have come down to us, are the following: "For bleeding the Commander of the Faithful twice yearly £150 *per annum*; for purging his Highness twice in the year, the same sum." The caliph

further paid him a regular salary equivalent to £500 a month and every New Year's Day he received a present of £1,250 with several robes of honour. When the Jewish traveller Benjamin, of Tudela, visited Bagdad about the year 1160 he found there sixty medical institutions "all well provided from the king's stores with spices and other necessities and every patient who claims assistance is fed at the king's expense until his cure is completed." About the same time the Emir Nureddin, having driven back the crusading hosts of Louis VII. and Conrad III., founded as an appropriate thank offering to the God of Battles a great hospital at Damascus which contained besides special departments for diseases of the eye and the like, a medical library and lecture room.

Two of the greatest physicians at Bagdad were Rhazes and Avicenna, both Persians. Rhazes (860-932) was a great clinician and ranks with Hippocrates and Sydenham as one of the original portrayers of disease; his description of smallpox and measles is the first authentic account in literature and is so vivid and complete as to seem almost modern. Rhazes wrote a great encyclopædia of medicine, the "*El Hawi*"; it was written in the typical Arab style, each section beginning with a long list of authorities, "A said," "B said," "C found" *et cetera* and sometimes ending with a modest "I say" or "I have found." In the year 1395 (that is 400 years later) it formed the most valuable of the nine volumes which composed the whole library of the medical faculty of Paris. The ninth book of Rhazes's encyclopædia was translated by Vesalius and was the chief source of therapeutic knowledge until long after the Renaissance. The second great physician, Avicenna, lived from 980-1036. He was a convivial soul, eminently successful in practice as court physician, but died in the prime of life worn out by excesses, chiefly drink. He was physician in chief to the celebrated hospital at Bagdad and is said to have written over a hundred works on different subjects. His "canon" is a huge, unwieldy storehouse of learning, in which the author attempts to codify the whole medical knowledge of his time and to square its facts with the systems of Galen and Aristotle. Written in clear and attractive style, this gigantic tome became the fountain-head of authority in the Middle Ages. On the whole the influence of the "canon" upon mediæval medicine was bad, for it set back the progress of surgery by inculcating the doctrine that the latter art is an inferior and separate branch of medicine; and also by substituting the use of the cautery for the knife. The fundamental error of mediæval medical science, as Sir Clifford Allbutt has pointed out, was in the divorce of medicine from surgery. Beginning with Avicenna, mediæval medical authority pushed Galen's dictum that surgery is only a mode of treatment to the extreme limit of treating the surgeon himself as a lackey and an inferior. The Arabian commentators of Galen and the mediæval Arabists who copied them, were much obsessed with the idea, peculiar to Oriental religions, that it is unclean or unholy to

touch the human body with the hands. This tenet gained ground in Christian scholastic and monastic minds and culminated in the famous edict of the Council of Tours (1163) "*Ecclesia abhorret a sanguine.*" The general practice of surgery including most of the major operations was in the end relegated to barbers, bath keepers, sow gelders and wayfaring mountebanks and the surgeon came to be regarded in such a menial light that even in Prussia up to the time of Frederick the Great (1660) it was still one of the duties of the army surgeon to shave the officers of the line. The principal interest of the mediæval period lies not in its internal medicine, for there was precious little of it, but in the gradual development of surgery from the ground up by faithful sometimes obscure followers of the craft. The practice of internal medicine during the Middle Ages was chiefly concerned with the elaboration of complicated prescriptions and the discovery of new drugs which should possess marvellous powers, and the writings of the mediæval physicians are crammed with all sorts of weird and wonderful formulæ. For instance, after the Crusades mummy became a favourite drug and usnea, the moss gathered from the skulls of the bodies of criminals that had been hanged and exposed in chains, was declared by many to be a sovereign remedy for many different ills. It is interesting to note that powdered mummy continued to be used down to the middle of the eighteenth century and usnea almost as late. The horn of the unicorn is frequently prescribed; the identity of this beast presents difficulty, but St. Hildegard, of Bingen (1098-1179) in her medical treatise, the "*Physica*," gives us the following description of the beast:

As the serpent in the Garden of Eden avoided the man and gazed at the woman, so this animal flees from men and follows females. A certain philosopher, skilled in the ways of beasts, had long hunted a unicorn, but could not catch him, whereat he marvelled greatly. But one day he went hunting with a company of men and women and the unicorn, seeing the girls, slackened his pace, sat on his hind legs and stared at them. And the philosopher, when he had diligently considered this, saw that the animal might thus be caught, so he came up behind him and captured him. For the unicorn, when he sees a girl, marvels that she has no beard and yet has the form of a man and if there are several girls, he marvels the more and is caught the more easily. Get a unicorn's liver and make it into an ointment with yolk of egg. There is no leprosy of any kind which this will not cure if the patient uses it often, unless his death is fore-ordained, or God willeth not that he be healed. Make a belt of unicorn's skin and wear it next your own and no pestilence or fever will harm you.

One very valuable prescription is to be found in the Anglo-Saxon Leechdoms, a translation of which is to be found in the series of the Master of the Rolls; it is worded as follows: "Against a woman's chatter, take at night fasting a root of radish; that day the chatter cannot harm thee."

Whilst the Arabs of the Eastern Caliphate at Bagdad produced such eminent men as Rhazes and Avicenna, the Western Caliphate at the great city of Cordova in Spain also boasted several celebrated physicians. Of these, Albucasis who died in 1013 at the age of one hundred and one, is especially to

be noted, because he wrote the first independent work on surgery, in which he condemns the surgery of his day as bad, owing to the ignorance of anatomy. "I have seen," he writes, "a surgeon incise a scrofulous swelling in a woman's neck; he stuck his knife into the cervical artery and the patient fell dead in his arms. I have seen another extract a large stone; he got the stone out but brought part of the bladder with it; the patient died on the third day. Surgical operations," he continues, "are of two kinds, those which benefit the patient, and those which usually kill him."

It is worthy of note that the Arabs introduced a large number of drugs into medicine in particular, senna, camphor, sandalwood, rhubarb, musk, myrrh, cassia, nutmeg, cloves, cubebs, aconite and mercury; in addition they were the originators of syrups, juleps, alcohol, aldehydes (all Arabic terms) and of flavoring extracts made of rose water, orange and lemon peel.

Medicine in the eleventh and twelfth centuries was lifted to a much higher level by the School of Salerno, the first medical school of modern history. The little seaside town of Salerno near Naples was known even to the Romans as an ideal health resort. The medical teachings and traditions of its famous school came upon the dreary stagnation of the early Middle Ages with something of the invigorating freshness of its own sea breezes. Its anatomy was based upon that of swine, its physiology and pathology were Galenic, its diagnosis mainly pulse and urine lore, but diseases were studied first hand in a straightforward, engaging manner; therapy was rational with an admirable scheme of dietetics; its surgery was new and original and obstetrics and nursing were ably cultivated by talented women, the celebrated *mulieres Salernitanæ*.

In the twelfth century a cooperative treatise was written by the best teachers of the school, entitled "*De ægritudinum curatione*," which contains an account of nearly every malady as then known. Like all such treatises it commences with the terrible enemy of the age, to wit, the fevers. These are divided into the ephemeral, the hectic, the putrid and the intermittent, these last being subdivided into the quotidian, the tertian and the quartan. The treatment advocated for the fevers consisted in baths, cold packs and epithems and laxatives; to cool the air of the room they said was better than many an internal remedy; but venesection was not forgotten. Then follow the diseases of respiration and so forth. Epilepsy is very well dealt with and so indeed are mental diseases and deliriums. Dropsy of the belly is distinguished from wind by the method of percussion.

Probably the best way to convey in brief form a good idea of the teaching in medicine at Salerno is to quote from the "*Regimen Sanitatis Salernitanum*" (the code of health of the School of Salerno), which for many centuries was popular in Europe. This book was written in rhymed verses and was dedicated to the King of the English, thought to be William the Conqueror, "*Anglorum regi scribit schola tota Salerni*" and in the translation of

Professor Ordonaux, of Columbia University, New York, begins as follows:

If thou to health and vigour wouldst attain,
Shun weighty cares—all anger deem profane;
From heavy suppers and much wine abstain.
Nor trivial count it, after pompous fair,
To rise from table and take the air.
Shun idle, noonday slumber, nor delay
The urgent calls of Nature to obey.
These rules if thou wilt follow to the end,
Thy life to greater length thou mayest extend.

Later on we read:

At early dawn, when first from bed you rise,
Wash in cold water, both your hands and eyes.
With brush and comb then cleanse your teeth and hair,
And thus refreshed, your limbs outstretch with care.

Again:

Great suppers will the stomach's peace impair;
Wouldst lightly rest, curtail thine evening fare.

Another maxim reads:

Art sick from vinous surfeiting at night?
Repeat the dose at morn, 'twill set thee right.

The first English translation of the *regimen* was made in 1575 and exists in manuscript in the library of Corpus Christi College at Oxford; two lines from the English translation are of interest because they show the origin of an oft quoted expression:

Use three physicians still—first Dr. Quiet,
Next Dr. Merry-man and third Dr. Diet.

It is always difficult to make mental pictures of the every-day life of so remote a period as the Middle Ages and it is well nigh impossible from their writings to gain any very clear idea of what the mediæval physicians looked like, how they were dressed or what manner of men they were. Fortunately we possess a number of miniature paintings which illuminate many of the manuscript codices of the mediæval masters and these give us graphic pictures of these old time medical practitioners. A superb miniature from the Turin Codex of the *El Havi* of Rhazes shows a Salernitan master inspecting urine in a glass, while a humble patient of rustic mien stands uncovered before him, holding the urine basket in his hand. The contrast between the professional gravity of the doctor's face and the pathetic solemnity of the anxious patient is one of the cleverest things in mediæval art. The urine glass became the emblem of medical practice in the Middle Ages and was used in some places as a signboard device. The urine was always contained in a characteristic flask of Erlenmeyer shape and this flask was carried in an osier basket with lid and handle, looking very like a modern champagne basket. The physician of whatever period is always represented as inspecting the urine in a most judicial way, holding it up to the light. One miniature shows the physician in his consulting room with a number of patients standing each with his osier basket in his hands whilst he discants on the properties of each individual specimen of urine. A miniature of Henry de Mondéville represents him as a sharp-featured, grey-haired man, tall and slim, in a purple gown of clerical cut, black skull cap, red stockings and slippered feet, reading lectures with

uplifted forefinger. Petrarch ridiculed the fourteenth century physicians for their rings on the fingers, tall horses, golden spurs, gorgeous clothes and pompous airs.

One very interesting contribution to medical literature that comes to us from Salerno is the twelfth century treatise entitled "*De Adventu Medici*" or "*The Doctor's Visit*." Some of the instructions it gives as to the conduct of the physician when summoned to a patient are decidedly naive; to quote a few:

On the way to see the sick person, learn as much as possible from the messenger, so that if you discover nothing from the patient's pulse or water, you may still astonish him and gain his confidence by your knowledge of the case. On arrival, ask the friends whether the patient has confessed, for if you bid him do so after the examination it will frighten him. Then sit down, take a drink and praise the beauty of the country and the house or extol the liberality of the family, if they deserve it. Next proceed to feel his pulse, remembering that it may be affected by your arrival or by his thinking of the fee. The fingers should be kept on the pulse at least until the hundredth beat in order to judge of its kind and character; the friends standing around will be all the more impressed because of the delay and the physician's words will be received with just that much more attention. Tell the patient you will cure him, with God's help, but inform the friends that the case is a most serious one. Look not desirously on the man's wife, daughter or handmaid, for this blinds the eyes of the physician and deprives him of the divine assistance, moreover it disturbs the patient's mind. When the patient is nearly well, address the head of the family or the sick man's nearest relative, thus: "God Almighty having deigned by our aid to restore him whom you asked us to visit, we pray that He will maintain his health and that you will now give us an honourable dismissal. Should any other member of your family desire our aid, we should, in grateful remembrance of our former dealings with you, leave all else and hurry to serve him."

This treatise was later developed into a regular handbook under the title "*De Cautelis Medici*" (Hints for Doctors) and one or two extracts from it are worth recording:

Suppose you can make out nothing, say there is an obstruction of the liver. Perhaps he will reply: "Nay, master it is my head or legs (or other members) that trouble me." Repeat that it comes from the liver or stomach, and especially use the word obstruction, for patients do not understand it, which is very important.

When you go to a patient, always try and do something new every day, lest they say you are good at nothing but books. . . . If you unfortunately visit a patient and find him dead and they ask why you are come, say you knew he would die that night, but want to know at what hour he died.

Another Salernitan physician suggests an excellent method of dealing with a non-paying patient: "Contrive that he shall take alum instead of salt with his meat; this will not fail to make him come out all over spots." The treatises from which these extracts have been taken were all written, be it noted, between the years 1100 and 1200 A.D.

The first known legal enactment for the regulation of medical practice in Europe was promulgated in 1140 by Roger II., King of the two Sicilies, and is worded as follows:

Whosoever will henceforth practise medicine, let him present himself to our officials and judges to be examined by them; but if he presume of his own temerity, let him be imprisoned and all his goods be sold by auction. The

object of this is to prevent the subjects of our kingdom incurring peril through the ignorance of physicians.

The grandson of this Roger, namely, Frederick II., enlarged on this and his medical enactments are of great interest and importance. The following are some of the chief:

Considering the harm which may arise from the ignorance of physicians, we ordain that no one shall henceforth practise physic unless he be first publicly examined by the masters of Salerno and present testimonials both from them and from those appointed by us and receive from us licence to practise. On receiving his licence he must take oath to attend the poor *gratis* and to denounce any frauds of the apothecaries and must still remain for one year under the supervision of some older practitioner. No surgeon shall practise until he has given evidence to the masters of having studied that part of medicine for at least one year and especially of having thoroughly learnt human anatomy, without which neither can incisions be safely made, nor fractures cured.

Whosoever shall have or sell any poison or noxious drug, not useful or necessary to his art, let him be hanged. . . .

Those who give magic drinks and love philtres, if they cause bodily harm, shall be punished with death; but if the recipient is uninjured, they shall forfeit all their goods and suffer a year's imprisonment. Investigators of truth and Nature know that these arts are foolish and fabulous, but even the intent to do evil should not go unpunished. . . .

We consider it our duty to preserve the salubrity of the air; wherefore we decree that no hemp or flax be placed for maturing in water within a mile of any town or camp, for we have learnt for certain that the air is corrupted thereby; let those who do so, forfeit their hemp or flax and be brought before our courts. We order that the depth of graves be not less than half a *canna*; penalty, a fine of one *augustale*.

The principal outcome of the School of Salerno was the work of two surgeons, Roger, of Palermo, and Roland, of Parma, whose writings were independent of Arabic sources. Roger's "*Practica*" was written about 1180 and reedited by his pupil Roland about 1250. It became the standard textbook at Salerno, where he himself had been a student and teacher. He knew of cancer, described a case of hernia of the lungs, prescribed ashes of sponge and seaweed (iodides) for goitre and scrophula, employed mercurial salves for chronic dermal and parasitic affections, introduced the seton and suture of the intestines over a hollow tube, taught the use of styptics, sutures and ligatures in hæmorrhage and unhappily the healing of wounds by second intention (laudable pus). These surgeons were followed by Theodoric who was the first surgeon to contradict the pseudo-Galenist dogma of "coction" or "laudable pus," and in the second book of his *Cirurgia* (1266) writes: "For it is not necessary, as Roger and Roland have written, as many of their disciples teach and as all modern surgeons profess that pus should be generated in wounds; no error can be greater than this; such a practice is indeed to hinder Nature, to prolong the disease and to prevent the conglutination and consolidation of the wound." This simple statement makes Theodoric one of the most original surgeons of all time and it was not till six centuries later, almost to the year, that Lord Lister retaught the same doctrine.

At this period, that is 1250-1300, these Italian pioneer surgeons replaced the use of ointments in dressing wounds by wine and evidently realized

its antiseptic properties. Their method was to wash the wound with wine, scrupulously removing every foreign particle; then they brought the edges together, not allowing anything to remain between the raw surfaces. Nature, they said, produces the means of union in a viscous exudation or "natural balm" as it was afterwards called by Paracelsus and Paré. In older wounds they did their best to obtain union by cleansing and refreshing the surfaces. Upon the outer surface they laid lint steeped in wine. Powders applied to the wounds they considered to be too drying and besides to have a tendency to prevent drainage. That their methods were efficient is testified to by their reports of getting linear cicatrices which could scarcely be seen; and it is to these surgeons that we owe the expression "*unio per primum intentionem*" (union by first intention).

The Salernitan school was the first to record the mediæval substitute for anæsthesia, the "*spongia somnifera*." This was a sponge steeped in a mixture of opium, hyoscyamus, mulberry juice, lettuce, hemlock, mandragora and ivy, dried and then when moistened, inhaled by the patient who was subsequently awakened by applying fennel juice to the nostrils. It is of interest that recently both hyoscine and scopolamine have been isolated from mandragora. The disuse of anæsthesia in succeeding centuries up to the discovery of chloroform in the nineteenth century is extremely difficult to understand; that this mediæval method of producing anæsthesia was successful there can be no doubt and the memory of it remained, for we read in the well-worn citation from Thomas Middleton's tragedy "Women beware Women" written in 1605:

I'll imitate the pities of old surgeons
To this lost limb, who, 'ere they show their art,
Cast one asleep, then cut the diseased part.

After Salerno the next great medical school was that of Montpellier in the south of France, where a number of men who are famous in the history of medicine, made their medical studies in the twelfth and thirteenth centuries, amongst them being Arnald, of Villanova, Henry de Mondéville and Guy de Chauliac. Montpellier, like Salerno, seems to have attracted students to its medical school from all over the world. There were undoubtedly many English there and probably also Irish and Scotch; and since the journey must have been long, tedious and dangerous and frequently accomplished on foot the whole way, one realizes how deeply interested these men of the middle ages must have been in knowledge for its own sake. In spite of the fact that books were all written by hand, the teachings of distinguished professors had a wide diffusion and students were quite ready to go through the drudgery of making these hand-written copies of a favourite master's work.

Arnald, of Villanova, was a distinguished professor at Montpellier and in 1285 was summoned to treat Peter III., King of Aragon; in 1299 he was summoned to a consultation at the bedside of King Philip the Handsome at Paris; in 1308 we hear of him again as physician to Pope Clement V. at

Avignon. His aphorisms are well known and were frequently quoted during the middle ages. Some will bear quotation, such as: "The lips of a wound will glue together of themselves if there is no foreign substance between them and in this way the natural appearance of the part will be preserved." "In large wounds sutures should be used and silk thread tied at short distances makes the best sutures." "A collection of pus is best dissolved by incision and cleaning out of the purulent material." "To put off the opening of an abscess brings many dangers with it." Arnald was a doctor in four faculties, theology, law, philosophy and medicine. His theological writings brought him into trouble, thirteen of his works being publicly burnt; his enemies accused him of fourteen deadly errors, the most interesting being that he openly taught "that works of mercy and medicine are more acceptable to God than the sacrifice of the altar."

A most interesting medical compendium, the *Brevairum Practicæ*, is ascribed to this Arnald, of Villanova, the third book of which begins thus: "In this book I propose, with God's help, to consider diseases peculiar to women and since women are, for the most part poisonous creatures, I shall then proceed to treat of the bites of venomous beasts."

Two Englishmen and one Scotchman were noted medical graduates of the University of Montpellier. Gilbertus Anglicus (Gilbert the Englishman) rose to be a chancellor of the University, his *Compendium Medicinæ* being his best known work. The most important feature of his book is an original account of leprosy which became the basis of mediæval information on the subject. He was also the first to refer to smallpox as a contagious disease, a view afterwards denied even by Sydenham. He died in 1250.

John of Gaddesden (1280?-1361) was a student of Merton College, Oxford, where he took his doctorate degree; he studied afterwards at Montpellier. He is thought by many to be the original of Chaucer's "Doctor of Physic" and was Physician to King Edward II. of England. He treated the son of King Edward for smallpox and having wrapped him in red cloth and made all the hangings of his bed red, so that the patient was completely surrounded by this colour, he writes that he made a "good cure and I cured him without any vestiges of the pocks." This method of treatment he had learned at Montpellier where it was the routine treatment and is interesting as anticipating the red light Finsen treatment of smallpox. His book is called the "*Rosa Anglica*," it is almost entirely a compilation and Guy de Chauliac wrote thus of it: "Lately there has arisen a foolish Anglican rose which was sent to me and I looked it over; I expected to find the odour of sweetness in it, but I found only some old fables."

The Scotchman was Bernard, of Gordon, who became a teacher at Montpellier from 1285 to 1307. His *Lilium Medicinæ* (flower names for medical works seems to have been the fashion at this period) is a characteristic Arabist textbook of medicine and

typical of the middle ages in its scholastic subtlety and rigid adherence to Galenic dogma. He describes as contagious acute fever (bubonic plague), phthisis, epilepsy, scabies, *ignis sacer*, anthrax, trachoma and leprosy; and the book is notable as containing the first description of a modern truss and the first mention of spectacles as "*oculus berellinus*."

Henry de Mondéville (1260-1320) was a hardy and original thinker who made a valiant last stand for the principle of avoiding suppuration by simple cleanliness as originally taught by Hippocrates and reintroduced by Theodoric. His ideas as expressed in his textbook of surgery as to what the training of a surgeon should be, are worth repeating:

A surgeon who wishes to operate regularly, ought first for a long time to frequent places in which skilled surgeons often operate and he ought to pay careful attention to their operations and commit their technique to memory. Then he ought to associate himself with them in doing operations. A man cannot be a good surgeon unless he knows both the art and science of medicine and especially anatomy. The characteristics of a good surgeon are that he should be moderately bold, not given to disputations before those that are not surgeons, operate with foresight and wisdom, not beginning dangerous operations until he has provided himself with everything necessary for lessening the danger.

He was endowed with great powers of wit and sarcasm and some excellent examples of these may be quoted:

God did not exhaust all his creative power when he made Galen. . . . Many more surgeons know how to cause suppuration than to heal a wound. . . . It is the surgeon's duty to keep up his patient's spirits in every possible way, for example, false letters may be written relating the decease of his enemies or those from whose death he expects advantages. Dreams should be correctly interpreted, as in the case of a man who was canon of four prebends and who dreamt two staves were brought him; next day he told this to his comrades while riding and one said: "Sir, you are canon of this and that, your bishops are dead and it is impossible but that at least two pastoral staves will be brought you!" Then he rode faster in his joy, with a loose rein and his horse fell and he brake both his legs and walked ever after with those staves he had dreamt of. When you are treating a wound or accident the friends should be excluded, for they may faint and cause a disturbance; but sometimes a higher fee may be got from persons present fainting and breaking their heads against wood and the like than from the principal patient. I have never found anyone so rich or even so honest, of any condition, religious or other, who was ready to pay what he had promised, unless obliged.

Henry gives a lively picture of how physicians and surgeons dealt with one another in his day.

If a physician is called to a patient and finds that he has a surgical disease, he will say: "Sir, it is well known that surgeons are proud and pompous, yet entirely devoid of logic and utterly ignorant; or if they know anything, they have learnt it from us physicians; they are also cruel men and demand high fees. On the other hand, you are weak, suffering and delicate and have heavy expenses, so I advise you not to seek their counsel; and I, from regard to you, though I am not a surgeon, will try to help you without them." If the patient recovers, well; but if not, then the physician will say: "Sir, I told you at first that I was not a surgeon, but for the said reasons and because I pitied you, I did what I did well and according to art and logic and better than any surgeon, God knows. But I am just now occupied with certain cases which prevents me attending to you as fully as before, so I advise you to allow me to call in a surgeon."

Then he contrives that a wretched ignorant type of surgeon shall be summoned and that for four reasons: (i.) that he may be unable to discover the physician's mistakes; (ii.) that the physician may dominate over him and so continue surgeon as before; (iii.) that if necessary he may throw the blame of his errors, past and future, on the surgeon and (iv.) that he may attribute any honour if forthcoming to himself.

Henry impartially draws a companion picture of the surgeon who tells his medical patients that physicians know nothing and do nothing but talk and dose everyone indiscriminately with medicines "which are most unsuited for your case" and so on.

John, of Salisbury, writing about the year 1160 A.D., thus describes the physicians of his day: "They swagger about Hippocrates and Galen, use unheard of terms and aphorisms and inflated language, they promise everything because they pretend everything; yesterday prentices, masters to-day."

The ablest surgeon of the thirteenth century was Saliceto (1201-1277); he was city physician at Bologna and in 1275 completed his "*Cirurgia*" "for love of my son, Leonardinus, whom I am bringing up to the profession of medicine." This work stands out as a landmark in the history of surgery for two reasons; he did not separate surgical diagnosis from internal medicine and secondly, he kept a good record of case histories, which he held to be the foundation of the art. He restored the use of the knife which Arabian practice had set aside in favour of the cautery; he showed how to suture divided nerves and to diagnose bleeding from an artery by the spurt of blood. He emphasized crepitus (*sonitus ossis fracti*) as a diagnostic sign of fractures and described the farrier's suture for intestinal wounds. Though Saliceto is usually classed among the surgeons, his medical treatise is four times as long as his work on surgery and one most interesting chapter is that on "hardness of the kidneys" (*Durities renum*): "This disease," he writes, "either begins insidiously after an inflammation or comes itself. Signs: decrease of urine, heaviness and slight pain in the region of the spine and kidneys, followed by dropsy. Treatment . . ." (he mentions various poultices and inunctions, the composition of which need not detain us). Then he continues: "Let him drink twice daily before dinner and supper oxymel and barley-water or decoction of mallow seeds with honey which is better. He should take as a purge, once a week, a decoction of rhubarb *et cetera*. His diet should be regulated, chiefly milk flavoured with honey or sugar, with rice and oatmeal cooked in milk of almonds or goat's milk."

The sound surgical principles of Saliceto were ably upheld by his pupil Lanfranc who practised in Milan until banished from there about 1290 for political reasons. He made his way to Lyons, where his success was so great that he was offered the chair of professor of surgery at the University of Paris. Here, by his straightforward style of lecturing and his use of bedside instruction he became the virtual founder of French surgery. "He attracted an almost incredible number of scholars to his lessons and by hundreds literally they accompanied him to the bedside of his patients and attended his operations," says Gurlt.

Guy de Chauliac (1300-1370) was the most distinguished authority on surgery in the fourteenth century. As an operator he set great store by the study of human anatomy and was one of the first to take the operations for hernia and cataract out of the hands of the strolling mountebanks. He believed in cutting out cancer at an early stage with the knife, but employed the actual cautery in the fungous variety as well as in caries, anthrax and similar lesions. Yet Guy de Chauliac was on the whole reactionary in the matter of the treatment of wounds and by his great authority held back the progress of surgery for some six centuries, giving his personal weight to the doctrine that the healing of a wound must be accomplished by the surgeon's interference, salves, plasters and the like, rather than by the healing power of Nature.

This very imperfect sketch of how by the labours of the great masters of long ago the knowledge and practice of medicine has advanced by slow degrees and of the vast difficulties with which medicine has had to contend, should give us pride "in a noble profession which," to quote Dr. Oliver Wendell Holmes, "for more than two thousand years has devoted itself to the pursuit of the best earthly interests of mankind, always assailed and insulted from without by such as are ignorant of its infinite perplexities and labours, always striving in unequal contest with the hundred-armed giant who walks in the noonday and sleeps not in the midnight, yet still toiling, not merely for itself and the present moment, but for the race and for the future."

PLEXIFORM NEUROMA.

By GEORGE BELL, O.B.E., M.B., Ch.M. (Sydney),
Honorary Surgeon, Sydney Hospital.

WITH A PATHOLOGICAL REPORT,

By KEITH INGLIS, M.D., Ch.M. (Sydney),
Pathologist, Sydney Hospital; Lecturer in Pathology,
The University of Sydney.

A.H., a female, aged twenty years, was admitted to Sydney Hospital on July 30, 1923, and complained of a tumour of the left hand. Her general health had been good.

The patient's sister has twins. Her mother's mother had twins. Her mother's brother is in a mental hospital. He used to take fits for three or four years before admission to hospital. Her father's mother had "no roof to his mouth."

Her mother stated that from birth the patient's left hand and fingers were larger than the right.

Fourteen years ago patient noticed a swelling on the left index finger. She had been born with a "freak" middle finger (macrodactyl) and this was amputated about this time. The tumour of the index finger increased in size and was painful at times.

The appearance of the "freak" middle finger before operation is seen in Figure I. The patient stated that the hand had been painful as long



FIGURE I.
Showing "freak" middle finger. From a photograph taken when the patient was under six years of age.

as she can remember. The pain occurred at intervals and sometimes kept her awake at night. Since admission to hospital the pain had been less and patient attributed this to the fact that she had not been working.

On examination the left index finger was very much larger than the right (see Figures II. and III.). The left ring finger was also larger and the increase in size was mainly confined to its radial half. A hard tumour could be felt on the radial side of the first phalanx. The left thumb was smaller than the right. The increase in size of the index finger seemed to be due to a number of soft fluctuant tumours. In the palm of the hand and for the most part in the radial half there was a soft fluctuant mass continuous with the large index finger and apparently extending beneath the anterior annular ligament to the flexor aspect of the lower third of the forearm.

The tumour in the palm presented an irregular surface suggesting an undulating tissue irregularly arranged in cords. It was slightly fluctuant and not very sensitive to pressure. The skin over the tumour was slightly glossy and suggested a minor degree of the glossy skin seen in certain peripheral nerve lesions of the upper limb.

The range of movement of the joints of the affected hand was excellent.

The patient complained of the deformity and of the affected hand being painful, but the pain did not appear to be of such severity as to interfere with appetite or sleep.

A skiagram was taken (see Figure IV.) and the abnormalities on the phalanges and metacarpals were thought by the radiologist to resemble gouty deposits.

The patient was examined at a meeting of the Sydney Hospital Clinical Society and opinions favoured it being a lymphangioma or a plexiform neuroma. The fact that pain was a prominent symptom suggested the latter diagnosis.

On September 5, 1923, under ether anaesthesia an incision was made over the tumour on the flexor aspect of the wrist. It revealed an ovoid soft tumour 3.75 centimetres (one and a half inches) long and 1.25 centimetres (half an inch) broad, semitranslucent and composed of fibres running in the direction of the main axis of the limb. It was continuous with the median nerve. The index finger was amputated by a racquet incision. An incision was made in the palm and the main tumour mass exposed. It was composed of a number of lobules and fibres of different sizes, the largest lobule being about the size of a pea. Some of these were of whitish colour and others resembled fat. The lobulated mass was irregularly arranged in strands. It was defined, traced proximally and divided at a point distal to the origin of the nerves to the thumb and ring finger. The patient was discharged on September 28, 1923.

After discharge from hospital X ray treatment was given to the tumour of the forearm.

On July 7, 1924, patient was shown at the clinical meeting of the New South Wales Branch of the British Medical Association in order that suggestions as to treatment might be obtained.

When seen on February 10, 1925, the tumour on the anterior aspect of forearm had increased slightly and the tissues on the dorsum of the hand seemed slightly more prominent. The patient stated that she could not fully supinate her forearm and full extension of the elbow caused a tight feeling in the limb. The tumour in the forearm was sensitive to pressure.

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The tumour in the index finger and in the palm of the hand is composed mainly of lobulated adipose tissue in which fibrous strands are dispersed irregularly. The largest tumour mass is situated in the palm on the ventral aspect of the second metacarpal bone. It measures approximately 3.5 centimetres \times 1.5 centimetres \times 1.5 centimetres. The tumour masses are not at all clearly defined, but merge insensibly in the normal tissue. In some lobules the fibrous tissue is so abundant as to present almost a fibromatous appearance. This



FIGURE II.
The left hand is larger than the right. The large size of the left index and ring fingers is evident.

especially applies to the tumour in the palm of the hand. The soft, irregular, slightly raised eminences which show through the thin shiny stretched skin of the ventral surface of the left forefinger and palm, are due to this abnormal adipose tissue. There is no brown pigmentation of the skin and no hypertrichosis.

The nerve bundles comprised in the median nerve at the wrist are very greatly enlarged and white in colour; they look like strands of vermicelli running parallel one with the other. Part of a cross section of the median nerve at this level is seen in Figure V. It will be noticed that there is increase of fibrous tissue between the bundles, but to a much greater extent is there increase within the bundles and here two different pictures are presented. These are shown more highly magnified in Figures VI. and VII. The late Professor Hunter examined these sections with me and was inclined to agree with me that the proliferated cells are probably connective tissue cells of the endoneurium and not Schwann cells. However, the sections examined so far do not yield enough information to warrant a definite opinion on this point. In the light of evidence quoted by Roman and Arnold the possibility of some of these proliferated cells being Schwann cells must be borne in mind.

The vascular character of the fibrous tissue between the nerve bundles is seen in Figure VIII. Figure IX. shows what I take to be nerve fibres within the muscle coat of a blood vessel. Bland Sutton⁽¹⁾ states that a coloured boy, aged three and a half years, had a swelling in the hypogastrium resembling a urachal cyst. T. S. Cullen removed a portion of the mass; it was bladder with very thick walls. The boy died. A plexiform neuroma was discovered between the muscular wall and the mucosa surrounding the cavity of the bladder "like a mantle composed entirely of nerves."

I suggest that Figure IX. illustrates a somewhat analogous condition between the muscular coat and endothelium of a blood vessel.

Figure X. shows the structure of the denser portions of the fibro-lipomatous growth in the palm.

It would seem that opinion as to the nature of neurofibroma has changed considerably of recent years. The literature on the subject has been care-

fully studied by B. Roman and D. P. Arnold⁽²⁾ from whose paper the following extract has been taken. Appended to their publication is a list of references which bear on this subject.

In spite of the original view that these multiple nerve tumours actually spring from the nerve tissue (Odieur, Virchow), they were for a long time regarded as fibromata. This was chiefly due to the influence of the doctrine that nerve fibres can only occur as processes of ganglion cells. . . . The histological studies of von Recklinghausen led him to believe that these tumours take their origin in the connective tissue sheath of the nerve, especially the endoneurium. He emphasized the identity of these tumours with the multiple fibromata of the skin with which they are frequently associated and justified the name neuro-fibroma as signifying merely the attachment of the fibroma to a nerve. Contrary to this, however, it has been

shown by Durante, Francini and Verocay that these tumours are of true neurogenic origin. . . (Verocay) pointed out the frequent combination of these tumours with tumours and anomalies elsewhere in the central nervous system. He identified the fibro-cellular tissue of which these tumours are essentially made up with the nerve fibre cells of Schwann, lemnoblasts, as they have recently been called by Ariens Kappers, and the ectodermal origin of these cells having been definitely demonstrated (Kohn, Held), he rejected the fibrous theory, especially as represented by von Recklinghausen's work, and suggested for these tumours the name of neurinoma, as signifying a nerve fibre tumour. This new interpretation has been generally accepted.

Roman and Arnold record the notes of a female patient three years of age who died of generalized tuberculosis and in whom there was also a ganglioneuroma involving the pelvic tissue and organs, the retroperitoneal region, the mesentery and mesocolon. The right optic nerve was the seat of a glioma and there

was slight hypertrophy of the right leg, the lower two-thirds of which were densely covered with dark hair. The bladder from the fundus to its outlet measured ten centimetres; a small area in the central part of its anterior wall was thin and collapsed, the rest of the wall was greatly thickened and involved in the tumous mass which filled the pelvis diffusely and in which the uterus, the vagina and the rectum were embedded. Microscopically there was found generally speaking an immense number of nerve bundles uniformly invading the muscle wall and nowhere breaking through the mucosa. Only two instances of a similar spreading of a ganglioneuroma were found in the literature; one was a case of ganglioneuroma of the vermiform



FIGURE III.
Shows the large size of the index finger and to a less extent of the ring finger. The irregular swelling in the palm, like the index finger, shows a mottled appearance due to irregularity in the contour of the skin surface.

appendix described by Oberndorfer, the other a case of a similar process involving a loop of intestine in a horse as described by Lotz. The case of Lotz was interpreted (by Pick) as one of partial gigantism of the intestine—as a congenital anomaly. Oberndorfer interprets his case in the same way. However, he looks upon the hypertrophy of the nervous tissue in the appendix as an additional blastomatous process, as a ganglioneuromatosis.

Prior to reading the paper of Roman and Arnold I had interpreted the tumour of our patient as being a connective tissue growth arising from the sheaths of the nerves, but in the light of the evidence they quote this interpretation is open to question.

One of the most interesting features of the specimen is to be found in the bone lesions. X ray examination revealed abnormalities on the phalanges and metacarpals which were thought by the radiologist to resemble gouty deposits. These outgrowths proved to be cartilaginous, but the resemblance to gouty deposits is interesting in the light of Sir James Paget's comparison between hands showing multiple cartilaginous tumours and those with accumulated gouty deposits.

The situation of these cartilaginous tumours is important. It will be observed that they are all placed in the area of distribution of the median nerve which is the nerve involved in the plexiform neuroma. The largest cartilaginous tumours were not removed at operation, the best available for study were those on the proximal phalanx of the index finger. Here irregular flattened laminae of cartilage partly surrounded the shaft. Portions of the shaft were decalcified and sections cut. The microscopic picture may be seen in Figures XI. and XII., which were taken from different areas. Figure XI. shows a thick, irregular zone of cartilage with cancellous bone beneath. The interstices between the bony trabeculae are filled with loose connective tissue. Figure XII. shows parallel fibrous strands running through the cartilage at

right angles to the surface. The cartilage merges in the dense fibrous tissue which surrounds it.

Sections of a flexor tendon of the index finger show deviation from normal in that the tendon bundles have not clearly defined outlines. They appear rather degenerate and to be partly converted into fibrous tissue. In places they merge in the adjacent connective tissue (see Figure XIII.). No recognizable nerve strands are to be seen separating the tendon bundles. Possibly the tendon changes are due to interference with nerve supply and to disuse.

Sections were also cut at the sides of the index finger to see if the vessels or skin showed unusual appearances in these situations. However, little deviation from normal was detected.

Billroth⁽³⁾ says that the phalanges and metacarpal bones are the most frequent seats of chondromata; more rarely the analogous bones of the foot. The chondromata are almost always multiple, sometimes in such numbers that scarcely a finger is free. The development of chondroma is chiefly peculiar to youth, not that it occurs exactly in young children, but about the age of or just before puberty; most chondromata date from this period even though they may not be observed until in later life. O. Weber has observed hereditary tendencies to the chondroma diathesis.

Paget's⁽⁴⁾ description of cartilaginous tumours is the best I have seen. He says that the bones of the hands are their most frequent seats and then the disease begins exclusively in the early periods of life, during childhood or at least before puberty and sometimes even before birth. When such swellings are grouped, they produce distortions of the hands, making them look like those of people who have accumulated gouty deposits. The cases of this singular disease have shown great diversity as to the course of the tumours and in their modes and rates of growth, some making progress, some remaining stationary, and it has often happened

LEGENDS TO ILLUSTRATIONS OF ARTICLE BY
DR. GEORGE BELL AND DR. KEITH INGLIS
ON "PLEXIFORM NEUROMA."

FIGURE V. $\times 9.5$.—Showing a Cross Section of the Median Nerve. The individual nerve bundles are much enlarged due to increase of fibro-cellular tissue. This and all other microphotographs are from sections stained by Hematoxylin and Eosin.

FIGURE VI. $\times 75$.—Nerve Bundle Similar to A in Figure V., but more highly Magnified. The axis cylinders cannot be recognized. The outer zone consists of dense fibrous tissue and blood vessels. The central more darkly staining area is possibly composed of similar tissue in a less organized state, but this is uncertain.

FIGURE VII. $\times 75$.—This shows a nerve bundle (akin to B in Figure V.) in which the connective tissue is increased in amount and encircles small round areas, within each of which cross sections of axis cylinders are present.

FIGURE VIII. $\times 56$.—The connective tissue between the nerve bundles is akin to that seen at D in Figure V. It is more fibrous and more vascular than normal. Some of the larger vessels show changes resembling those seen in Figure IX. Probably the changes are all occurring in association with small nerve fibrils.

FIGURE IX. $\times 125$.—This represents C in Figure V. only at a slightly different level. I am inclined to regard this as a much altered blood vessel with an outer thickened fibrous adventitia; within this is a muscular coat then a thick zone of tissue which resembles the small rounded areas of Figure VII. and which I suggest is composed of nerve fibres cut transversely. Within this again are what I take to be few endothelial cells surrounding a small lumen.

FIGURE X. $\times 31$.—This is from the growth in the palm. It shows an abnormal large nerve of which there are many, and in the right lower half many smaller nerves in old fibrous tissue. These two elements in varying proportions comprise the dense fibrous portions of the growth. In the upper part of the figure adipose tissue can be seen enmeshed in dense fibrous strands. The masses of adipose tissue which are so evident to the naked eye and which look like lipomata microscopically show similar strands of fibrous tissue in much less marked degree.

FIGURE XI. $\times 38$.—Showing the Cartilaginous Thickening on the Proximal Phalanx of the Index Finger.

FIGURE XII. $\times 125$.—Illustrating a Different Area from Figure XI. It shows the cartilaginous growth more highly magnified. The parallel fibrous strands at right angles to the surface are conspicuous. The cartilage is covered by a thick layer of fibrous tissue.

FIGURE XIII. $\times 75$.—The tendon bundles appear degenerate; they tend to split and in places at their margins they appear to be changing into fibrous tissue.

ILLUSTRATIONS TO ARTICLE BY DR. GEORGE BELL AND DR. KEITH INGLIS ON "PLEXIFORM NEUROMA."

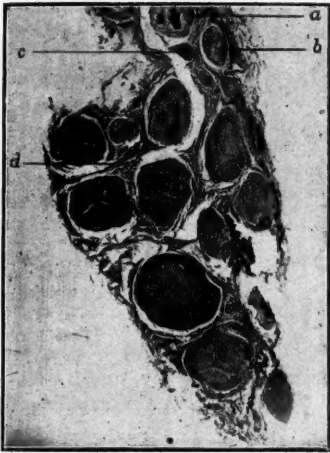


FIGURE V. $\times 9.5$.

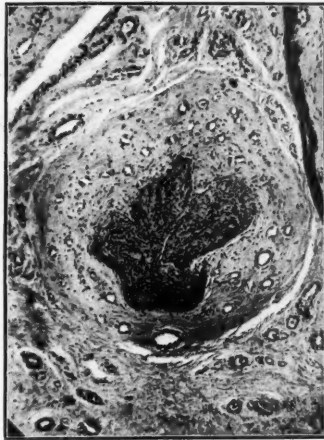


FIGURE VI. $\times 75$.

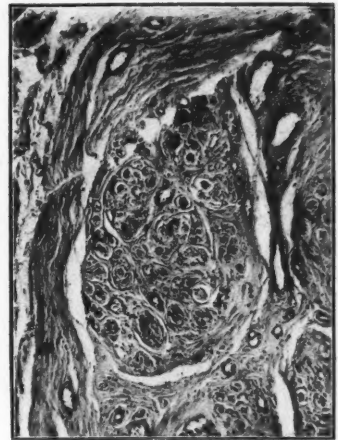


FIGURE VII. $\times 75$.



FIGURE VIII. $\times 56$.

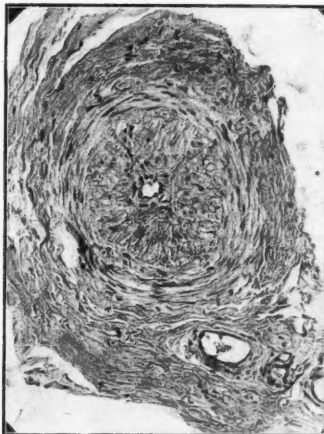


FIGURE IX. $\times 125$.



FIGURE X. $\times 31$.



FIGURE XI. $\times 38$.

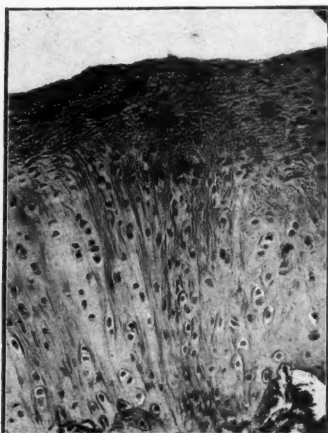


FIGURE XII. $\times 125$.

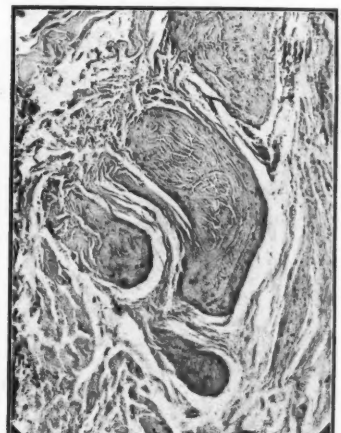


FIGURE XIII. $\times 75$.

ILLUSTRATION TO ARTICLE BY DR. GEORGE BELL AND DR. KEITH INGLIS ON "PLEXIFORM NEUROMA."

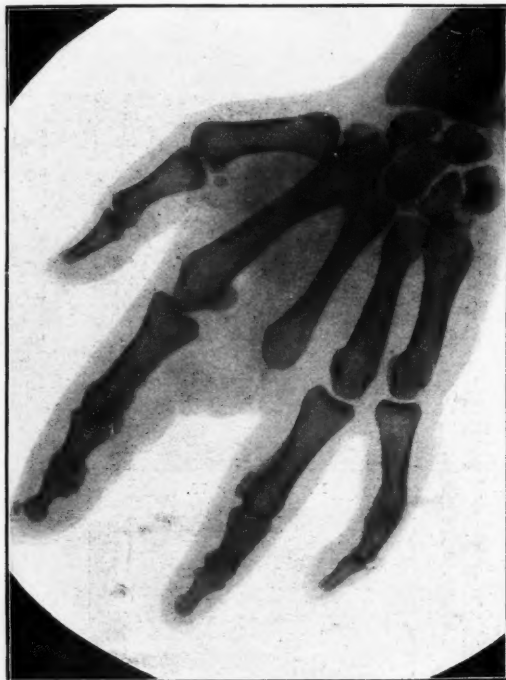


FIGURE IV.
Showing skiagram of hand after amputation of finger.

ILLUSTRATION TO ARTICLE BY DR. GEORGE BELL AND DR. KEITH INGLIS ON "CONGENITAL TUMOUR OF LEFT UPPER LIMB."



FIGURE III. (Case II.).
Showing Skiagram of Arm. Note the fibrous appearance of the
adipose tissue.

ILLUSTRATION TO ARTICLE BY DR. GEORGE BELL AND DR. KEITH INGLIS ON "CONGENITAL TUMOUR
OF LEFT UPPER LIMB."



FIGURE II. (Case II.).
Showing Skiagram of Arm. Note the bony lesions of epicondyle
and of shaft of humerus.

ILLUSTRATION TO ARTICLE BY DR. BENJAMIN T. EDYE.



Skiagram Showing Appearance of Bone in Dr. Edye's Patient.

that at the time of manhood all have ceased to grow.

Macfarland⁽⁵⁾ gives a good illustrated account of congenital local hypertrophy frequently spoken of as partial gigantism. The following account is taken from Macfarland's book. He says that not infrequently it takes the form of gigantic size of one or several of the extremities—fingers or toes—to which it may be limited, or from which it may gradually fade away into the normal tissues of the adjacent parts. Sometimes on the contrary it manifests itself through the development of an unaccountable asymmetry of the more centrally situated structures, making the face lop-sided or giving the trunk a lateral massiveness. Curling in 1845 collected seven cases with affection of the digits of the right hand. One of the patients was his own and in this patient the middle finger of the right hand and the fore and middle fingers of the left hand were affected and of great size. In J. P. Mann's case the patient was a boy, aged twelve years, who at birth was observed to have the deformity. His left foot was remarkable through the enormous size of its outer three toes, each of which was about twice its normal length and three times its normal thickness. The proportions were otherwise not notably disturbed and each digit was provided with a well formed nail proportional to its size. The disturbance affected the phalanges, the metatarsals and the outer tarsal bones and was accompanied by an increased thickening of the soft parts that extended up to the outer side of the leg to the knee. Macfarland concludes that no satisfactory explanation of the condition has been offered.

No mention is made by Macfarland of multiple chondromata or neuro-fibromatosis in connexion with this condition of localized hypertrophy. The association between fibro-neuromatosis and gigantism has often been noted. The two usually occur in the same situation as in the patients of Oberndorfer and Lotz, but they may be separate from one another as in the patient of Roman and Arnold, though in this patient it is probable the hypertrophied limb had in it an element of fibro-neuromatosis. When partial gigantism occurs apparently alone, as in the cases cited by Macfarland, it seems not improbable that there was a latent neuro-fibroma or allied condition predisposing to the hypertrophy.

The association between plexiform neuroma and multiple chondroma was recognized by Bland Sutton, but multiple chondromata associated with gigantism seem more rare and I do not happen to have seen any record of this combination.

The chief importance of our report lies in the fact that three congenital abnormalities, localized hypertrophy (macroductyl), plexiform neuroma and multiple chondromata were all present in the one patient and apparently limited to the lateral half of the left hand and forearm. It is interesting to speculate on the relationship, if any, these lesions bear to one another. At first I thought that probably they all had some common underlying factor

of the nature of a malformation or developmental abnormality in the connective tissue; but if the plexiform neuroma be really an ectodermal lesion, it seems more likely that it is the primary and essential lesion, the localized hypertrophy and the multiple chondromata being secondary effects. This, however, is mere conjecture.

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- ⁽⁵⁾ Joseph Macfarland: "Surgical Pathology," 1924.

CONGENITAL TUMOUR OF LEFT UPPER LIMB.

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Honorary Surgeon, Sydney Hospital.

WITH A PATHOLOGICAL NOTE,

By KEITH INGLIS, M.D., Ch.M. (Sydney),
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R.S., aged fifty-four years, a farmer, was admitted to Sydney Hospital on December 3, 1924. He was born with a large left upper limb and the thumb, index and middle finger had been removed by operation when he was aged eighteen months. Despite this disability he had earned his living for many years by working as a carpenter and house builder and lately as a farmer. He has no other congenital deformity, but has a sister with a hare lip.

He fractured his right femur nine months ago by falling under a plough while driving a ten horse team.

Patient is able to flex and extend the remaining digits and uses the hand for grasping.

The appearance of the limb is well shown in the photograph (Figure I.). The patient states that three weeks after fracturing his femur he noticed that his left arm was weaker and he thinks that the limb has become somewhat larger since he has been using crutches. The increase in size seems to be due mainly to fatty tissue. In the lower third of the anterior aspect of the forearm there is an irregular cord-like structure resembling a plexiform neuroma. The limb has not been painful.

The measurements of the limbs in circumference are: Right arm, twenty-five centimetres; right forearm, twenty-five centimetres; left arm, forty-six centimetres; left forearm, 32.5 centimetres.

The radiologist reported that evidence of old changes were to be seen in the right femur about the glenoid margin and the greater tuberosity. He thought that possibly they were the result of an

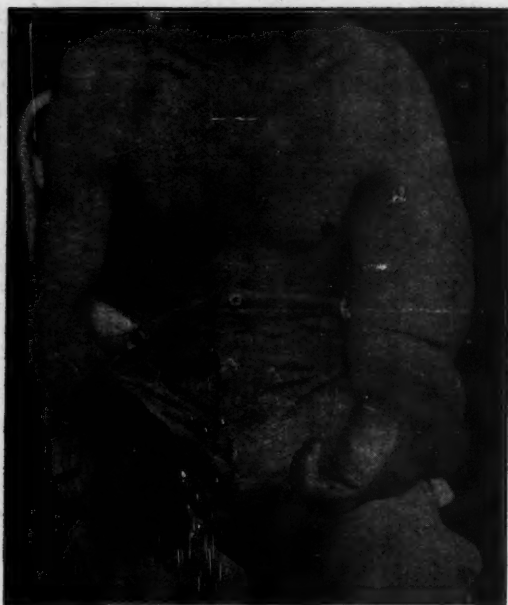


FIGURE I. (Case II).
Showing Appearances of the Affected Limb.

old injury. A fracture of the neck of the right femur with some shortening was present. A periosteal deposit of doubtful nature was seen in the middle of the left humerus. He found an old detachment of the lateral epicondyle and osteoarthritis of the left elbow together with malformation of the left wrist and hand.

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The tumour seems to be composed mainly of adipose tissue. The increase of adipose tissue is so great that it appears to involve the whole arm, but closer examination reveals that it chiefly affects the lateral aspect and to a less extent the posterior aspect of the limb; the medial aspect of the limb does not share in the abnormal development of adipose tissue.

This corresponds with the bony changes, for they tend to be distributed on the lateral aspects of the bones. In view of the close correspondence in the distribution of the lesions of the soft parts and of the bones in Case I. (plexiform neuroma), it seems to me highly probable that the bony lesions in this case (Case II.) are associated with the tumour and that they are not inflammatory and merely incidental.

The irregular lines extending through the substance of the adipose tissue seen in the skiagram (Figure II.) are probably strands of fibrous tissue so that the soft mass is really fibrolipomatous rather than purely lipomatous. This corresponds to the condition of the hypertrophied fat in Case I., for there too fibrous tissue was mixed with the adipose tissue. In Case I. (Figure X.) adipose tissue is seen enmeshed in fibrous strands, but here the fibrous tissue predominates. Elsewhere, how-

ever, in that specimen the proportions are reversed, the tissue being mainly lipomatous with a few scattered strands of fibrous tissue here and there. In spite of the great size of the left arm of this patient its length is the same as that of the right. It is not an example of partial gigantism as was the middle finger in Case I. The increased bulk is probably due to overgrowth of fibrolipomatous tissue corresponding to that in the palm and index finger of the patient with the plexiform neuroma.

In Figure III. it will be seen that the tumour not only shows linear shadows, but is throughout slightly more opaque to the X rays than ordinary soft parts of the limb. I have noticed this before in large masses of growth in a patient with von Recklinghausen's disease and suggest that it is due to masses of fibrous tissue or the presence of innumerable small strands of connective tissue essentially akin to that accounting for the more definite linear shadows.

Of necessity the interpretation must be largely conjecture, but this case appears to have many points in common with Case I. In particular the lesion is congenital, the tumour appears to be fibrolipomatous. The situation of the bony lesions corresponds roughly to that of the tumour of the soft parts. In my opinion therefore the condition is probably one of neuro-fibromatosis or plexiform neuroma with associated fibrolipoma and bony lesions, the latter possibly being cartilaginous and of the nature of multiple chondromata.

Reports of Cases.

CHRONIC TUBERCULOUS OSTEOMYELITIS OF THE FEMUR IN AN ADULT.¹

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CHRONIC tuberculous osteomyelitis of a long bone such as the femur in an adult is uncommon in Australia. The instance here reported occurred in a single woman, aged thirty-nine years, who was a barmaid by occupation. She was admitted to Saint Vincent's Hospital on the recommendation of Dr. V. M. Coppleson on April 21, 1925, complaining of pain and swelling in the right thigh. The pain began two and a half years before; it was of a dull and continuous nature, located above and below the right knee and was thought to result from a fall on a polished floor. The patient sought advice and had treatment from time to time, but without relief. The swelling was first detected in the lower third of the thigh in December, 1923. It progressed slowly until three months ago when a second injury caused it to advance more noticeably. During the two and a half years she had lost weight to the extent of 25.2 kilograms (four stone) and had suffered from anorexia and constipation. Her previous health was good with the exception of "gastric influenza" six years ago. She also had an attack of measles about twelve months after the

¹ Read at a meeting of the British Medical Association on June 11, 1925.

onset of the present illness. Her mother is still alive and her father died of "kidney trouble" when sixty-seven years of age. No evidence of tuberculosis in the family could be elicited. The patient was emaciated and anæmic. There was an irregular swelling of the lower half of the right thigh definite below but gradually disappearing about the middle of the thigh. The muscles were wasted and it was possible to recognize by palpation that the swelling was due mainly to enlargement of the femur which appeared also to have its forward curve exaggerated. In the antero-medial aspect of the lower third of the thigh there was a large, slightly tender, fluctuating swelling, but there was no alteration in the overlying skin. The hip and knee joints were unaffected, the calf muscles were wasted. Vague signs, suggestive of an old tuberculous focus in the apex of the right lung were detected. There was no pyrexia. The radiological report by Dr. Harrison was to the effect that extensive chronic osteomyelitis of the middle and lower thirds of the femur was present with large areas of necrosis but no sequestration. The appearances are seen in the accompanying illustration.

Dr. Marjory Little and Dr. L. Utz reported that the blood serum yielded no response to the Wassermann test and that no response was obtained to the hydatid precipitin test.

The red blood cells numbered 4,940,000 per cubic millimetre, the hæmoglobin value was 80% and the colour index 0.8. The leucocytes numbered 9,400 per cubic millimetre and of these the neutrophile cells were 78%, the eosinophile cells 2%, the lymphocytes 10% and large mononuclear cells and transitional cells 10%.

From the clinical, radiographic and pathological findings, new growth, fibrocystic disease, hydatid disease, syphilis and tuberculosis were ruled out and a diagnosis of chronic pyogenic osteomyelitis was made. At operation on May 5, 1925, the affected portion of bone was freely exposed by an incision along the lateral intermuscular septum and the lateral wall of the lower half of the shaft of the femur was removed by chisel and gouge forceps, the bone was exceedingly dense and consisted of partially eroded cortex and new subperiosteal bone. A large tubular cavity occupying the lower half of the femur was thus laid open and curetted. It was lined by granulation tissue and contained creamy-yellow pus and sequestra of cancellous bone. The fluctuating swelling was opened by two incisions on the medial aspect and was found to consist of two large collections of serous fluid and curdy material beneath the muscles. These cavities were evacuated and curetted, but no communication with the bone was obvious. They were packed with gauze to control hemorrhage. The bone cavity was also packed with gauze and the lateral wound sutured. The gauze was removed by the fourth day. The lateral wound healed rapidly but one of the medial incisions is not quite healed. The patient's general health has improved rapidly. Some degree of pain persists, but without interfering with sleep. Dr. Marjory Little demonstrated numerous tubercle bacilli in the pus from the bone cavity and reported that the tissue which lined the cavity had the structure of tuberculous granulation tissue as indicated by the presence of epithelioid and giant cells and areas of necrosis.

Comment.

There is little tendency to new bone formation about tuberculous foci. Choyce⁽¹⁾ states that the hypertrophic type is rare. It attacks the ends of long bones and is associated with diffuse thickening of the bone. Transverse section shows it to be endosteal rather than periosteal. As the disease progresses it involves in turn the cancellous tissue, the compact bone and the newly formed subperiosteal bone. In the end the periosteum breaks down and an abscess is formed in the soft parts; this may travel some distance along the line of least resistance. Brown and Stiefel have recently published an account of multiple bone tuberculosis illustrating the difficulty of distinguishing by radiographic means between pyogenic osteomyelitis, tuberculosis and syphilis.⁽²⁾

References.

- (1) C. C. Choyce: "A System of Surgery." Vol. III., 1923.
- (2) Charles L. Brown and Daniel M. Stiefel: "A Case of Multiple Bone Lesions of Atypical Röntgenographic Appearances with the Pathological Findings." *The Journal of Bone and Joint Surgery*, July, 1924, page 550.

Reviews.

SURGERY OF THE WAR.

THE history of the "Surgery of the War" is recorded in two volumes prepared by the consulting surgeons and by some of the surgical specialists who held commissions in the Royal Army Medical Corps.¹

The first volume contains chapters on general subjects affecting the surgery of the war and indicates the development of front line surgery and wound treatment generally, followed by chapters on wounds of the thorax and abdomen.

In the opening chapter the important international documents embodying agreements reached in the half century prior to the Great War are discussed in an interesting manner. These agreements limited the use of certain kinds of instruments of violence in European warfare in order to mitigate its severities. It is interesting to note that Germany has always stood for absolutely ruthless warfare. The crux of the matter is summed up in the following sentence: "Humanitarianism, in fact in nations wealthy and industrially efficient cannot keep pace with the inventiveness of destructive science."

The weapons and projectiles used in the Great War and their mode of action are briefly surveyed and facts are chosen which have some interest or importance for the surgeon.

In Chapter II. the results of projectile action are considered. The information gained from experience of big game shooting is given and the results of experimentation with a small arms projectile by well known authorities are stated. The effects of actual explosion of shells, bombs and grenades are discussed and the chapter concludes with a consideration of the anatomical situation of wounds and the actual injury to the tissues involved. The valuable drawings and specimens in the museum of the Royal College of Surgeons will always be a source of information for the military surgeon.

One fact of great interest is the observation that whereas in a large number of all wounds the effects of the injury are limited to the tissues immediately surrounding the track of the missile, in many cases more distant effects have been seen. Thus the spinal cord and the brain have been seriously damaged without injury to the spine or skull and the lungs and the abdominal viscera have been wounded without actual penetration of the chest or abdominal cavities. Similar radiating effects on the peripheral nerves and vessels were noticed.

"Wound Shock in Front Line Areas" by Lieutenant Colonel Cowell is the next subject. He must have shown much cool courage in carrying out his researches. This term is selected in preference to "surgical" or "traumatic" shock as it recalls all the associated ætiological factors. It is subdivided into primary and secondary wound shock. An outline is given of the gradual evolution of the measures taken to treat shock more elaborately, leading up to the "anti-shock campaign of 1917." The valuable researches carried out up to the termination of the war have been of great benefit to civilian surgery. Details of treatment are well set out in a summary entitled "Hints for the Prevention of Wound Shock" by the late Captain Parker of the Canadian Army Medical Corps.

Wound shock in casualty clearing stations is dealt with in a separate chapter by Captain John Fraser. The more

¹ "Medical Services: Surgery of the War," in two volumes, edited by Major-General Sir W. G. Macpherson, K.C.M.G., C.B., LL.D., Major-General Sir A. A. Bowlby, K.C.B., K.C.M.G., K.C.V.O., Major-General Sir Cuthbert Wallace, K.C.M.G., C.B., and Colonel Sir Crisp English, K.C.M.G.; Volume I.: 1923. London: His Majesty's Stationery Office; Demy 8vo., pp. vii. + 618, with six coloured plates. Price 26s. net.

reasonable theories of shock are briefly mentioned and its clinical pathology, diagnosis and treatment discussed. A simple but important summary of measures for the prevention of shock during surgical operations concludes the chapter.

Chapter V. by Major Gordon Taylor gives an account of the development of blood transfusion in the treatment of hemorrhage and shock. Credit is given to the Canadian surgeons for popularizing the indirect method of blood transfusion. The apparatus and the technique for the preparation and transfusion of "whole" or citrated blood are described in detail. Under war conditions the citrate has a decided superiority over other methods of transfusion. A full account is given of the preparation of preserved blood which may be given at any time up to twenty-six days from the date of its collection. Citrated fresh and preserved blood proved of great use at aid posts and advanced dressing stations. It is stated that its use there had such a satisfactory moral effect upon the men "going over" that the combatant services soon got in the way of sending back word of an impending raid to the shock centre. In desperate cases of gunshot wounds of the abdomen blood transfusion more than trebled the recovery rate.

The "Development of Casualty Clearing Stations and Front Line Surgery in France" is traced by Sir Anthony Bowlby in Chapter VI. At the commencement of the war the prime duty of a casualty clearing station was to arrange for the satisfactory evacuation of sick and wounded, rather than for their active treatment which, it was contemplated, would be carried out on the lines of communication and at the base. It was soon realized that the wounded man's fate depended on efficient treatment in the casualty clearing station. The clearing stations were therefore provided with bedsteads and bedding and skilled nursing sisters. New and additional equipment was also supplied. Many surgical teams were attached to clearing stations and these were arranged in groups. Facilities for X ray and pathological diagnosis were also provided. These measures were so successful that at times 70% of the wounded had their wounds excised and primary suture carried out. Tables are given showing the incidence of wounds, the number of operations performed and the mortality rate.

The chapter on gas gangrene is illustrated by some excellent coloured drawings which show well how the infection has a predilection for muscles. When efficient excision of wounds was carried out, the incidence of gas infection like that of other infections was greatly reduced.

Primary excision of wounds is shown in the chapter on tetanus to have had a pronounced effect upon the incidence of that disease during the closing years of the war. It is one of the great surgical lessons of the war, but as under war conditions it cannot always be carried out, it is insisted that the alternative method of administering antiserum to the wounded cannot be dispensed with. Indeed the figures show that serum prophylaxis was the chief factor in bringing about the dramatic reduction in tetanus. It also served to prolong the incubation period in cases in which tetanus did develop and it modified the manifestations of the disease. The chapter teems with valuable observations.

In the account of trench foot Xenophon is stated to have been familiar with the condition. In France when the measures of prevention, "making a fine art of the toilet of the feet," "gum" boots and hot food were employed, they were effective.

In the chapter on anaesthesia stress is laid on the importance of using warm ether vapour and gas and oxygen. Their employment saved many lives. Civil practice has gained much from experience of anaesthesia during the war.

In Chapter X. on the "Surgical Work in Field Ambulances," the efficacy in primary excision of wounds at the clearing stations in preventing infection is shown to have had an important influence on the treatment of the wounded man in the field ambulance. Briefly it consisted in the application of all those measures which would result in his speedy evacuation in a suitable condition for operation at the casualty clearing station. A description of the measures is given and full credit is awarded to the Thomas knee splint in the transport and treatment of

fractures of the femur. This piece of apparatus did more than any other to mitigate the agony of the wounded man.

Surgery in general hospitals is dealt with next and is naturally concerned chiefly with the treatment of established infection in wounds. Wright's use of hypertonic saline solution is described and also the futile attempts to sterilize infected wounds with certain antiseptics. An account is given of the introduction and use of "Eusol," bismuth, iodoform and paraffin paste and "Flavine." The evolution of secondary suture and delayed primary suture is outlined.

Chapter XIII. deals with the surgical work in Palestine, Mesopotamia and Macedonia. The mobile nature of the operations in Palestine afforded opportunities for the successful employment of many advanced operating units. In Mesopotamia too the war after the capture of Kut was largely one of movement. The fighting line was frequently far away from the casualty clearing stations and transport of wounded became increasingly difficult. In the opinion of the consulting surgeons the great heat had little effect on patients who were submitted to operation. The result of operations on head conditions in the campaign were disappointing.

Scurvy occurred during the siege of Kut, but the Gurkhas did not suffer, as they ate horseflesh. Their wounds healed more readily than those of others.

Difficulties of transport prevailed in Macedonia where the mule was much used. The majority of the men with abdominal wounds reached the casualty clearing station within twelve hours and the results were good. Gas gangrene was unexpectedly frequent, especially among the Serbians.

Wound treatment in the United Kingdom is the subject of Chapter XIV. It is shown that while the main problem in France was to effect efficient mechanical sterilization of a contaminated wound, in the United Kingdom too often it was necessary to sterilize by chemical means a heavily infected wound. The necessity of this was only slowly grasped by many. The defects of organization and surgical treatment are stated and an account given of how they were overcome. The chief lesson to be learned is that the training of the military surgeon in wound treatment must be undertaken during peace.

Colonel Gask and Colonel Elliot contribute the chapter on wounds of the chest and no one can speak with more authority than they. The death rate from such wounds was very high. It is compared with the mortality in previous wars. The development of the treatment of chest wounds and the gradual evolution of prophylactic thoracotomy is related. Though the results were disappointing, as nearly a third of patients submitted to thoracotomy became affected by sepsis later, the practice proved that the chest could be opened and that pulmonary injuries and diseases could be treated successfully without those special adjuncts thought necessary prior to the war. The section devoted to the pathology of wounds of the chest is very complete and is well illustrated. An interesting historical account of the treatment is given from the fourteenth century onwards. "Mondéville of Normandy instituted a method which is surprisingly modern." He removed all foreign bodies and closed the wound as soon as possible. A full account (with illustrations) of the treatment, expectant and operative (including technique) is the final feature of one of the most valuable chapters in the volume.

Sir George Makins gives an account of injuries to the pericardium and heart. He states: "The War Office collection of pathological specimens contains a series of injuries to the heart which illustrates every form of lesion that has been described from the accumulation of experience during the whole history of surgery."

The notes of a dozen cases of wounds of the pericardium are given and they illustrate various aspects of the subject. Wounds of the heart generally involve the apical two-thirds of the organ. Here too many interesting cases are quoted in illustration of wounds of the heart. The surgical operations on the heart and their indications are described. The impunity with which the heart can be handled, is

remarkable. This chapter serves to show that cardiac surgery made a notable advance during the war.

The last chapters on "Wounds of the Abdominal Viscera" and "Abdomino-Thoracic Wounds" are written by Sir Cuthbert Wallace, Col. Fullerton and Major Wagstaffe. It was soon found that the deductions made from experience in the South African War were not applicable to the treatment of wounds of the abdominal viscera in France. It was, however, a year before the expectant treatment was abandoned and rapid evacuation of men with abdominal wounds to the nearest casualty clearing station was made the official method. Later on special advanced operating centres were created for those with abdominal and thoracic wounds. Three charts illustrate the regional incidence of abdominal wounds. A remarkable case is recorded of a man who recovered without operation, after having been shot through from side to side at the Battle of Loos. Subsequently at the Battle of the Somme he was operated upon for an abdominal wound and a segment of small intestine resected. It presented several recent perforations and several old healed wounds, resulting at one spot in an entero-enterostomy. The influence of time on the result of operation is very definite: "Up to six hours the chances were in favour of the patient; after this period they were always against him."

Hæmorrhage stands out as the greatest enemy of the surgeon. The total operative mortality after operation became the rule, remained at about 50% throughout the war. Since, however, as time went on, more desperate cases reached the surgeon, in reality there was a substantial change for the better.

Wounds of the individual viscera are dealt with more fully in a separate chapter. An unusual case was that of a man hit in the back about the fourth right interspace. He was treated for a thoracic wound, as there were no localizing symptoms. Two days later he passed *per anum* the coil of a bullet and the day following the mantle.

For treatment of wounds close to the cardia of the stomach the transpleural route is advised.

Wounds of the small intestine were generally multiple on an average of not less than four. The importance of examining the whole length of the small intestine before deciding on suture or resection of the rents is urged. Suture is advised when possible. Multiple resections in the series studied were always fatal. End to end suture is thought to be preferable to lateral anastomosis. Next in frequency to wounds of the small intestine are wounds of the large gut. Wounds involving the extra peritoneal surface and thus the retroperitoneal cellular tissue were very serious owing to infection and "colon septicæmia" which often developed. Such wounds were difficult to detect and treat.

The liver when wounded was generally the only viscus involved. Expectant treatment is advised except where injury to other viscera is possible. Operation should then be the rule. When sepsis supervened, secondary hæmorrhage was a frequent cause of death.

Four times out of seven the spleen is the only organ wounded. Hæmorrhage and shock are responsible for the mortality of 50%. The thorax was often involved when the kidney was wounded. If the kidney wound became septic, secondary hæmorrhage occurred in about a fourth of the cases and demanded nephrectomy.

Strangely enough wounds of the bladder were seldom associated with wounds of the pelvic colon or rectum. Men with wounds of the bladder and small intestine almost invariably died after operation.

The last chapter ends with a short but important account of abdomino-thoracic wounds and diaphragmatic herniæ.

Each chapter in the volume is followed by a bibliography.

The volume has been well edited and the style is singularly uniform.

HEART DISEASE FROM THE CLINICAL ASPECT.

DR. LEROY CRUMMER, Professor of Medicine in the University of Nebraska, has written a book on the clinical features of heart disease. It has an introduction with very

well deserved praise by Dr. Emanuel Libman, of New York, well known for his work on chronic ulcerative endocarditis.¹

It is a different book in some respects to the average American textbook. There are no pictures and no diagrams. The paper is soft and dull. It is an easy book to read. The bibliography is small and the personal easy style of writing suggests the teacher talking to his class. Dr. Crummer was during the war an instructor at the United States School of Military Medicine at Fort Oglethorpe. He apparently made use of much of his teaching material in writing this book and he hopes that "the following pages will shape and substantiate two ideas. First a diagnosis of valvular heart disease does not imply imminent nor sudden death. Second decompensation is a diagnosis which should be made early and only a minor portion of that diagnosis is made from physical signs."

Dr. Crummer has soaked himself in the work of Mackenzie and Lewis and the student will find no very new ideas, but the most recent work including the "circus" movement in auricular fibrillation is well discussed and quinidine receives a fairly complete review.

In luetic disease he commends only mercury, the importance of iodides is not indicated, but he is probably rightly cautious about the arsenic compounds.

There is the irritating tendency often seen in American books to speak of signs and conditions by the names of those who originally described them, though in this respect surely Parry has prior claim to Basedow. Thus we have Graham-Steell murmurs, Krehl's disease and Karrell diet, a rather confusing system in a book intended for students.

Stenocardia will be a new word to many readers. The author defines it as "a sense of constriction under the upper sternum which is usually the first symptom of aortitis." "This symptom has exactly the same significance in aortic disease that dyspnoea and oedema have in mitral disease."

But it is in discussing the nervous aspects of heart disease that the author is at his best. Thus in Chapter I.—"The History"—he says: "The more detailed, complete and spontaneous the history, the greater the probability that the ultimate diagnosis must be a neurosis, or whatever label is used for that unfortunate class which throng our consulting rooms, seeking, but seldom finding, relief." *Esperito crede.*

Inspired by such sentiments as these the chapter on cardiac neuroses will be read at once and with a feeling of interest and agreement that few books on heart disease have ever given.

Read in conjunction with Lewis's "Effort Syndrome" many problems in civil practice would become easier, while the condition of the returned soldier with disordered action of the heart would be a little less heart breaking. He breaks away from Lewis in insisting, quite rightly we think, that there are really two conditions: (i.) The irritable heart of Da Costa, seen in the convalescence or the early stages of toxic disease, especially tuberculosis; (ii.) a genuine cardiac neurosis of which the basis may be fear, a war neurosis, or as pointed out by Freud and Mackenzie, sexual.

It was in 1895 in his original article on anxiety neurosis that Freud gave a short but very definite account of the heart symptoms, symptoms identical with those found in patients suffering from disordered action of the heart and it was not until 1901 that Krehl, whom Dr. Crummer proposes to honour with the name of the disease, published his book.

The next chapter in interest is that on cardio-vascular renal disease. In this the author tends to break away from Mackenzie. For whereas Mackenzie thought little of the value of the sphygmomanometer, Dr. Crummer considers it of great value and follows Janeway in his views on arteriosclerosis. Essential hypertension, cardio-sclerosis and granular kidney he holds to be merely different manifestations of the same process with different names according to the organ in which the incidence is

¹ "Clinical Features of Heart Disease: An Interpretation of the Mechanics of Diagnosis for Practitioners," by Leroy Crummer, M.D., Introduction by Emanuel Libman, M.D.: 1925. New York: Paul B. Hoeber, Incorporated. Post 8vo., pp. xix. + 353. Price: \$3.00.

most severe. This attitude may or may not be accepted, but at least it gives a unity of pathology and also a unity of treatment—too often as with Dr. Crummer—therapeutic nihilism. Nothing, he says, does any good, diet, drugs, way of life. The process will still go on in most cases to heart failure, in some to uræmia and in a relatively small number to apoplexy.

The chapter on decompensation is complete; at times it lapses into a catalogue of symptoms and signs, but usually a clear picture of events is given.

The conclusion is an attempt to consider a dozen different aspects in too small a space. Marriage, pregnancy, occupation, attitude, are some of them. They are discussed all from the same standpoint, not "what are the signs?" but "how does the patient feel?" This after all is what matters.

A special chapter on prognosis would have been a help, although prognosis is discussed under each heading.

Finally in an appendix is the famous circular No. 21 of the Surgeon-General's Department—a collection of common sense principles for recruiting medical officers.

Taken all round the book is a very good one. It is marred by the usual Americanisms and some slovenly English, but it is one that a fifth year student or house physician would enjoy and benefit by reading. Moreover, every physician will find much in it to interest him, sometimes in agreement, sometimes in objection. At the least it will drive any reader back to the pages of Mackenzie and Lewis which can always be read with some benefit and increase of knowledge.

INANITION AND MALNUTRITION.

DR. C. M. JACKSON'S BOOK, "The Effects of Inanition and Malnutrition upon Growth and Structure," is really a prodigious piece of work.¹ It is a digest, more or less critical, of the enormous literature that has grown up about the subject of inanition and malnutrition of various kinds. It is very welcome. But one is staggered at the industry, the perseverance and the indomitable courage of the man who has accomplished it. It will be an invaluable, indispensable work of reference. In the first part there is a short review of the effects of inanition on plants, protozoa and on the higher invertebrates. Then in Part II. follow nearly four hundred pages on the subject as it affects vertebrates, first the effects on the body as a whole of total and then of partial inanition and finally the effects on different parts and organs of the body. Part III. consists of conclusions, tables and a bibliography. There is evidence that considerable care has been taken to insure correctness of reference. The bibliography which will be very valuable to the scientific worker, takes up no less than one hundred and eight pages. We congratulate Dr. Jackson and his publishers.

SCIENTIFIC THERAPEUTICS.

DR. LANGDON BROWN published a little book on the physiological principles in treatment first in 1900; there have now been five editions, the last appearing a few months ago. For any medical work to go into five editions is good evidence of its value and "Physiological Principles in Treatment" is no exception.²

British medicine has always been peculiarly rich in physicians and surgeons who were physiologists first. There has been a very good tradition in British schools that a young graduate of ability should spend some years as house surgeon and house physician and then some years as demonstrator in anatomy or physiology before beginning practice—often at a very moderate salary.

Dr. Langdon Brown is no exception. He spent his early years in practice demonstrating in physiology and working out minor physiological problems. So to medicine he brought a physiologist's cast of mind. All through this book, therefore, he preaches what is too often forgotten, that rational diagnosis, treatment and prognosis rest on sound physiology.

There are no great changes in the plan of the book, but two new chapters on the work of the liver and on "Insulin." It is by the way rather striking to think that the advances in both these very difficult and vital subjects have only been made by way of the very experiments which "Optimist" condemned in a recent letter to THE MEDICAL JOURNAL OF AUSTRALIA.

The chapter on the ductless glands is but little changed, though some of the more recent work on the parathyroids has been included. Here as always the standard required is the exact physiological one, very different to the vague therapeutic results of so many trans-Pacific workers. Next comes a chapter on the rational treatment of gastric disorders, in which the author deals with a range from gastric carcinoma to simple indigestion. One small point is doubtful: Is there ever, apart from a yeast fermentation, such a thing as gas-production in the stomach? Is not all the gas in flatulent dyspepsia simply the result of aerophagy, just as it is in the "windy" baby?

Rectal feeding is explained most clearly in a mixture of applied physiology and common sense. Study of that article would save many a patient from an irritated bowel and a soiled bed. Intestinal stasis is treated with moderation and common sense. Not that it does not exist, but "in what number of cases does it actually do harm" is his attitude. It is curious to find how closely he agrees with a surgeon like Walton in the question of treatment, both requiring very definite proof and both considering operation to be avoided in the majority of instances.

On the liver though much new material is presented, there is still much vagueness, but an honest vagueness of "we do not know" rather than the vagueness of names mistaken for knowledge. The chapter on jaundice presents the work of Van den Bergh (of whose test the author is elsewhere a little critical), Aschoff and McNee in a clear and very easily understandable form. The physician and physiologist join in the sentence: "Milk is usually regarded as the mainstay (of diet in jaundice), but owing to its comparative richness in fat it is not really suitable and is disliked by many."

As in the previous editions the chapter on uric acid and the purin bodies is outstanding. That unpopular mixture of common sense and physiology is displayed throughout, to the damage of many theories popular among both physicians and laymen.

The chapters on glycosuria, diabetes and ketosis are all rewritten because of "Insulin" and are as clear and concise as could be. The work of Graham (of St. Bartholomew's Hospital) is naturally much quoted and "Insulin" is welcomed as a great advance in the treatment of severe diabetes. Ketosis and acidosis naturally receive much attention.

Of irregular action of the heart he gives a clear and moderately complete account, following of course Mackenzie and Lewis, with an occasional note of dissent, as in the use of digitalis in conditions other than auricular fibrillation. The account of "soldier's heart" is unsatisfactory as all such accounts will be till the whole subject is attacked by a joint team of cardiologists, psychologists and general physicians.

Blood pressure gives rise to little fresh matters; the distinction between essential hypertension (though there is no mention of Allen's work with salt-free diets) and secondary renal hypertension is well made.

The chapter on albuminuria remains a model of sound medical theory and practice.

Like an experienced general physician he insists most strongly on the nervous factor in asthma, a factor too often forgotten by the immunologist. There is a last and not very adequate chapter on calcium metabolism. Throughout the book is obviously the work of a physician engaged in treating patients, not a mere laboratory worker, but a physician who tries constantly to apply laboratory standards to his work at the bedside.

¹ "The Effects of Inanition and Malnutrition upon Growth and Structure," by C. M. Jackson, M.S., M.D., LL.D.; 1924. Philadelphia: P. Blakiston's, Son and Company. Royal 8vo., pp. xii. + 616, with 117 illustrations. Price: \$8.00.

² "Physiological Principles in Treatment," by W. Langdon Brown, M.A., M.D. (Cantab.), F.R.C.P.; 1924. Baillière, Tindall & Cox; Crown 8vo., pp. viii. + 511. Price 10s. 6d. net.

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Indirect Methods of Advertising.

In August, 1923, we drew attention to a warning notice issued by the General Medical Council of Great Britain in regard to certain indirect methods of advertising commonly practised by medical practitioners. It will be remembered that this notice was issued as a result of representations made to the General Medical Council by Dr. R. A. Bolam, the Chairman of the Council of the British Medical Association. The latter body has always regarded the question of advertising by medical practitioners as a matter of grave concern and it is commonly conceded that in arriving at their important decisions its members are actuated by the highest motives and have at heart not only the best interests of the medical profession, but also the safety and welfare of the general public.

At the Annual Representative Meeting of the British Medical Association held at Bradford in 1924 the Central Ethical Committee presented a report on indirect methods of advertising. Much discussion ensued on the question of contributions by medical practitioners to the lay press. It was felt that the principle of strict anonymity might in certain instances be detrimental and defeat useful intentions. On the motion of Dr. R. Langdon Down, the Chairman of the Central Ethical Committee, it was determined that the two clauses which were the subject of controversy, should be referred back for further consideration. At the recent Annual Representative Meeting held at Bath the report of the Central Ethical Committee, containing a revised paragraph in place of the two previously under discussion, was adopted. The revised paragraph as recorded in the Supplement to *The British Medical Journal* of July 25, 1925, is as follows:

From time to time there are discussed in the lay papers topics which have relation both to medical science and policy and to the health and welfare of the public, and it may be legitimate or even advisable that medical practitioners who can speak with authority on the question at issue should contribute to such discussions. But

the practitioners who take this action ought to make it a condition of publication that laudatory editorial comments or headlines relating either to the contributor's professional status or experience shall not be permitted; that his address or photograph shall not be published; and that there shall be no unnecessary display of his medical qualifications and appointments. There is a special claim that practitioners of established position and authority shall observe these conditions, for their example must necessarily influence the action of their less recognized colleagues. Discussions in the lay press on disputed points of pathology or treatment should be avoided by practitioners; such issues find their appropriate opportunity in the professional societies and the medical journals.

It will be evident at once that the adoption of this provision allows much more latitude in this regard than has been customary in the past. In these circumstances it is necessary to point out, although decisions of the parent association at the Annual Representative Meeting in England should be and are used as general guiding principles for the Branches of the Association in Australia, each member of the Association in Australia is bound by the by-laws of his or her particular Branch. As a matter of fact many misconceptions exist in the minds of Australian practitioners in regard to this matter and it behoves them to study the by-laws dealing with it. The man with a message suitable and necessary for the public enlightenment will find that the requisite machinery exists for its dissemination and the individual with a thirst for notoriety and cheap publicity will discover that the limitations to his endeavours are strict and definite.

In the determination of the advisability for seeking the publicity of the lay press three factors should be taken into consideration. The matter must be judged from the point of view of expediency, from the point of view of propriety and from that of pure ethics. If a course of action can be justified from these aspects no exception can be taken to it. The matter should not be one of great difficulty. After all it rests with the individual concerned. If he is punctilious in guarding his professional reputation and honour from any suspicion, he will seldom find himself in a quandary.

The point of view of the newspaper proprietor is necessarily different from that of the medical practitioner. He frequently seeks advice on medi-

cal questions from some one qualified to give it. In these circumstances correct and reliable information is given to the general public. Some newspaper editors, however, are not so careful. News must be provided, it must be sensational and must have a "bite" in it. Whether it is true or not appears to make little difference. Facts are so twisted and essential details are suppressed to such an extent that the interpretation placed on them is calculated only to tickle the ears and whet the appetites of a sensation-loving and gullible public. There is no doubt that by these means the very organs which should teach the community, act merely as a stumbling block and constitute a definite bar to the institution of reforms based on scientific data.

Current Comment.

THE SURGICAL TREATMENT OF NEPHRITIS.

It would be unwise to endeavour to measure the magnitude of the tragedy of any given disease or group of diseases on the information gleaned in the experience of one medical practitioner. Prognosis is notoriously a difficult and inexact chapter of medicine. Authors of textbooks and of journal articles usually dismiss this subject in a few brief and unconvincing sentences, except when the disease in question is of short duration and its termination takes the form of complete recovery or early death. Often the doctrines of prognosis are complicated and limited by the fact that a group of diseases may appear in acute, subacute and chronic forms. It may be possible to forecast with some degree of accuracy the ultimate fate of an individual patient, but it is often impossible from the available information to ascertain even approximately the amount of incapacity and the measure of the shortening of life in a given community resulting from such a group of diseases. In the case of nephritis it is essential to know how much ill health is caused and how many lives are shortened, before the value of any method of treatment can be determined. Impressions cannot be recognized in such a study; the actual facts concerning large numbers of patients must be collected and studied. Scattered throughout medical literature there is a vast store of data relating to the life histories of persons with affected kidneys. As far as we are aware no one has collected and tabulated the details of the histories of a substantial number of persons who have suffered from the various forms of nephritis and who have been treated by medical and dietetic means.

Professor Hermann Kümmell, of Hamburg, has recently discussed the surgical treatment of

nephritis more particularly from the point of view of prognosis.¹ His object is to demonstrate the advantages of decapsulation. He prefaces his remarks by calling to the mind of his readers that it was Harrison and not Edebolds who first advocated the surgical treatment of nephritis. This was about a quarter of a century ago. The idea did not meet with general favour and for a decade or more there were few who dared to emulate the example of the pioneers. Two operative procedures were recommended, decapsulation and nephrotomy. The latter is the more dangerous and more difficult operation. When the kidney is acutely swollen and oedematous, incision and stripping of the capsule relieves the increased tension and leads to a restoration of the normal renal circulation and of the normal secretion of urine. It has been shown experimentally that if both ureters are tied and decapsulation is carried out on one kidney, this organ is found after death to be far less injured and changed. Professor Kümmell adduces evidence to show that even when the kidney is not congested and strangled by its constricting capsule, disturbances of the renal circulation can be diminished or eliminated by division of the capsule. A thorough study of the effect of decapsulation on the renal circulation led him to the conclusion that part of this effect is due to the exclusion of the sympathetic innervation of the organ. The sympathetic fibres of the true capsule are necessarily divided during the operation. Under certain condition he has stripped the network of sympathetic nerve fibres from the renal artery and vein and from the upper part of the ureter and divided these fibres on their passage to the kidney. The result was a dilatation of the renal vessels and an increased flow of blood through the kidney. He suggests that there is a spasm of the renal vessels of toxic origin and that this is brought about by an involvement of the sympathetic fibres. He calls attention to the fact that division of the sympathetic fibres cannot cause dilatation if the destructive process is far advanced. Next he seeks an explanation of the observed restoration of the secretory function of both kidneys after one-sided decapsulation. The explanation is that numerous communications and crossings of the sympathetic fibres exist in the two sides of the body. In the last place it has been suggested that the operation of decapsulation acts in virtue of a non-specific stimulation of the organ. Professor Kümmell does not accept this view, at all events in its entirety, although he admits that the effect of certain formic acid preparations injected for the purpose of restoring lost renal function is that of a non-specific stimulus.

Theoretical considerations and experimental studies of the mode of action of a mechanical procedure cannot determine the effect of that procedure as a therapeutic measure in a group of pathological processes. The criterion on which the decision must be based, is the comparison of the effects of

¹ *Klinische Wochenschrift*, March 5, 1925.

the procedure with the effects of other forms of treatment. The evidence submitted by Professor Kümmell is highly suggestive, even if it is not complete. In the first place he gives an account of the results obtained in the acute forms of nephritis. He has performed the operation once for acute scarlatinal nephritis. The child was in the third week of the disease and anuria had lasted for forty-eight hours. The result was that the secretory function of the kidneys was restored immediately. The child died a fortnight later. For anuria caused by poisoning by perchloride of mercury he performed decapsulation five times. The immediate effect was admirable, but only one of the patients ultimately recovered from the poisoning. A patient poisoned with oxalic acid was operated on for anuria; the renal function was restored at once and recovery followed. He has had no experience of decapsulation for nephritis with eclampsia, but he refers to some excellent results obtained by other surgeons. He attaches more importance to the operation for acute infective nephritis than for other acute forms. When the process depends on the presence of small abscesses in the cortex, the removal of the capsule is followed by the escape of the pus and the repair of the swollen and congested organ. He maintains that as soon as the diagnosis is made, the operation should be performed. He carried it out in thirty patients. Three patients died and twenty-seven recovered. Nine of the patients remained well for periods varying between two and seventeen years. He obtained excellent results in every patient save one with trench nephritis on whom he operated during the war. The indications for decapsulation in trench nephritis were oliguria, anuria and uræmic symptoms. No operation was performed until it was evident that the patients were not doing well under medical treatment.

The evidence of Professor Kümmell in regard to decapsulation for the acute forms of nephritis is interesting and instructive. From it we are justified in suggesting that other methods would probably not yield such good results in acute infective nephritis, in anuria associated with acute poisoning and in trench nephritis. We are not convinced that equally good results could not have been obtained in response to energetic medical treatment in the other acute forms.

The second group consists in the chronic forms of nephritis. The first condition is that in which pain is a prominent symptom. *Nephritis dolorosa* is the name often used. The patient usually complains of one-sided pain, nausea, vomiting, sweating and fever. The pulse is rapid and small; oliguria is noted during the exacerbations, and the renal function is disturbed. The operation was performed on twenty patients with this condition. All recovered and the majority were found to be well after several years. The second condition mentioned is hæmorrhagic nephritis. During recent years the frequency of so-called idiopathic renal hæmorrhage has diminished greatly. By this is meant a unilateral renal hæmorrhage for which

no adequate cause can be detected. Kidneys have been removed on very many occasions for this condition. Careful investigation has nearly always revealed some nephritic changes. Professor Kümmell points out that if the changes are localized and not situated on the surface, they cannot be recognized during the operation. He claims that in all cases of obscure bleeding from one or both kidneys, an attempt should be made to ascertain the actual cause. If this cannot be determined, little time should be lost before decapsulation is performed. In this way the chances of overlooking renal tumours in their early stages will be reduced. His patients numbered forty-two. Of these twenty-four were subjected to the operation of decapsulation, fifteen to nephrotomy and three to nephrectomy. Only one of the patients died. He was able to trace thirteen of those treated by decapsulation at a later stage. Only two had recurrences of the bleeding.

Decapsulation is strongly recommended for chronic interstitial nephritis in the presence of anuria and commencing uræmia. Professor Kümmell states that the operation should not be postponed beyond the third day of the anuria. It is claimed that the effect of the operation is extremely dramatic. He has performed decapsulation for Bright's disease twenty-eight times. Ten of the patients died, but he claims that the operation was undertaken when they were practically *in extremis*. Twelve patients were cured, by which he means that all the symptoms and signs disappeared. Eight were improved and three were discharged unimproved. Nine patients were subjected to nephrotomy. Of these two died, two were uninfluenced by the operation and five were either cured or much improved. He performed nephrectomy on five patients. Three of these patients were still free from untoward symptoms after thirteen, twelve and three years respectively.

It appears that opinions are divided concerning the place of kidney operations in the treatment of chronic forms of nephritis. Some authorities deny that they are justified under any circumstances. Others maintain with equal emphasis that they save lives in a most dramatic manner. It is difficult to argue in favour of the operation for the removal of one kidney in a chronic affection involving both organs, even if it be admitted that the operation should only be performed in desperate conditions. On the other hand both nephrotomy and decapsulation are not mutilating operations. The incised kidney and the stripped capsule heal after a short time and under favourable circumstances the physiological and anatomical repair may be complete. It appears that this conservative surgical intervention may lead to a restoration of relative health, while less drastic measures may be futile. More knowledge is required of the result of the various forms of medical treatment, including even the exhibition of heroic remedies. It seems probable that when this information has been collected, it will be noted that better results can be secured by surgical treatment.

Abstracts from Current Medical Literature.

SURGERY.

Duodenal Ulcer.

C. A. PANNETT (*The Lancet*, March 14, 1925) states that there are two extremes of opinion in regard to the treatment of duodenal ulcer. According to one view duodenal ulcer should but rarely require surgical aid and according to the other the treatment should always be surgical. He holds that neither view is correct and that the treatment in every instance should be governed by the light of previous experience. At Saint Mary's Hospital, London, of ninety-one patients whose condition was diagnosed as duodenal ulcer during the period 1920 to 1923, only forty-five were submitted to operation. Medical treatment includes a dietetic régime, the administration of alkalis or atropine and rest in bed. Operative treatment should not be undertaken unless the disease has lasted for a considerable time, has proved refractory to medical treatment or has endangered life by causing a hemorrhage. The author quotes cases to show that too early surgical interference may end in the ulcer being missed owing to the fact that large, acute ulcers may show no signs on the outer aspect of the stomach and that the patient may be unrelieved until operation is undertaken for chronic indurated ulcer years later. A point of importance in the examination of the stomach for ulcer is that ulcers on the posterior wall may be missed unless the lesser omental sac is perforated and a search made from within outwards. Strikingly diverse opinions are expressed in regard to the efficacy of gastro-jejunostomy. Moynihan has stated that over 90% of his patients consider themselves well after operation and that the incidence of jejunal ulcer is not more than 2%. Sherren found 92.6% of five hundred patients well two years after operation and declared that if patients go two years without symptoms, they do not become affected by them afterwards. Balfour in America investigated a thousand patients and found that 88% remained "cured," that the operative mortality was less than 2% and that only 3.5% complained of recurrence. Those who were "cured," had all been operated on more than ten years previously. On the other hand various reports from continental observers are not so favourable, clinical cure being present in only 60% to 70%. In the author's experience 69% were "cured." He thinks he is justified in looking for some method of dealing with the intractable duodenal ulcers which are not cured by gastro-jejunostomy. He has therefore performed duodenectomy in preference to gastro-jejunostomy whenever it seemed safe. Thus during

1923-1924 out of twenty-nine patients operated on for duodenal ulcer eighteen have undergone duodenectomy. He describes the difficulties of the operation and states that in some instances in which excision has been impossible owing to the extent of the ulcer, obstruction of the pylorus by cutting the stomach across proximal to the pylorus, has proved satisfactory and given relief when previous gastro-jejunostomy has failed to do so.

Treatment of Joint Tuberculosis.

G. AXHAUSEN (*Klinische Wochenschrift*, April 30, 1925) discusses the relative advantages of surgical, orthopaedic and sunlight measures in the treatment of joint tuberculosis. He considers that heliotherapy combined with surgery when required gives the best results. The ultimate result depends largely on the site and character of the lesion and on the age of the patient. Modern treatment means more than purely medical attention. It is a social problem and the State will have to provide suitable areas in which hospital patients can be exposed to sunlight. This is not to be found at present near large industrial areas.

Renal Lithiasis.

WILLIAM F. BRAASCH (*Illinois Medical Journal*, April, 1925) discussing the clinical data in cases of renal lithiasis, pays special attention to the etiology of the disease, the interpretation of the radiogram, the surgical indications when the stones are multiple and post-operative recurrence. The bacterial cause of renal stone has been clearly established by the experimental investigations of various authors, including Rosenow, Meisser, Keyser and Hager. The interpretation of the radiogram is often difficult, the following conditions being most often the cause of confusion: Calcified glands, gall stones, calcified foci in renal tuberculosis, unusual position of stone (low, median, high) and the absence of shadows due to early or soft formation. Cystoscopy and ureteral catheterization may be necessary to allow differentiation from these conditions. The indications and method of operation for single stone have been moderately well standardized, but the procedure to be adopted in the presence of multiple stones is a matter for clinical judgement, the question being whether the stones or the kidney should be removed. The amount of damage done to the kidney often depends on the shape of the stone, round stones being removed more easily than coraliform branched stones filling the pelvis. In bilateral nephrolithiasis the comparative function of either kidney must be considered in determining the type of operation. When the function is normal a conservative operation is indicated, but when no dye is returned, nephrectomy is generally necessary. "Silent" stones can cause considerable renal damage. The possibility of recurrence

of renal stone following operation was first pointed out by Cabot. In recent figures from the Mayo Clinic recurrences are reported in 10% of cases. In order to obviate the possibility of leaving stones in the kidney at operation renal fluoroscopy on the operating table has been practised in the Mayo Clinic for the last five years. There is usually a definite period in the patient's life during which he forms stones, so that if all are removed after the patient has had stones for a year or so, there will be very few recurrences. There are, however, a few patients who continually form stones, but in such the stones are frequently small and are passed spontaneously.

The Closure of Enterostomy Openings.

A. O. LOE (*North-West Medicine*, April, 1925) in discussing the closure of enterostomy openings states that acute intestinal obstruction must be considered a possibility in any surgical abdominal operation, especially when associated with suppuration requiring drainage. Enterostomy saves the patient's life, but must be undertaken early before the onset of toxic symptoms and paralytic ileus. It may be done under local anaesthesia. A Paul's tube may be inserted into the exposed bowel or fixed with a purse string suture or a catheter buried in the bowel after the manner of Witzel. During closure of these enterostomy openings several cardinal principles must be observed. The skin, if excoriated, must be brought into good condition. The new wound of entrance should be made well to one side of the fistula, the abdominal tissue should thus be approached from the normal side. This will allow good exposure which is necessary to permit a survey not only of the fistula but of the previous obstruction. When possible the bowel and fistulous tract should be dissected out *en masse*. The author favours a bowel resection when closure of a large opening or multiple openings is necessary. In this procedure the careful preservation of the blood supply of the bowel along the line of anastomosis is essential. The opening in the bowel is made more patent by cutting on an angle, more being removed from the free border than from the mesenteric border and the closure of the anastomosis is rendered more secure by a line of reinforcing sutures. Even after the greatest precautions have been taken, drainage should be established to the site of anastomosis to allow for oozing and prevent formation of abscess. The bowels should be opened early, liquid paraffin being a useful adjunct to the treatment.

Perforated Gastric and Duodenal Ulcers.

PATERSON BROWN (*Edinburgh Medical Journal*, April, 1925) writes of the best method of dealing with acute perforations of gastric and duodenal ulcers. Surgeons are divided into those who believe in simply closing the ulcer and doing nothing more,

and those who do this and in addition perform a gastro-enterostomy, but not on every occasion. McCreery has recently summarized the arguments for and against the two methods of treatment. Against gastro-enterostomy it is stated that closure alone cures the ulcer, after gastro-enterostomy mortality is increased and it is accompanied by the danger of spreading peritoneal infection; reperforation, hæmorrhage and stenosis are exceptional after closure and there is the danger of jejunal ulcer after gastro-enterostomy. In favour of closure with gastro-enterostomy it is said that it is not true that closure results in cure and that mortality is increased; gastro-enterostomy relieves symptoms in a large proportion of cases; suture always narrows the lumen to some extent and the incidence of jejunal ulcers is low. Gastro-enterostomy is recommended as an addition for those patients who are in good condition and are operated upon within the first twelve hours. They are ultimately more fit than those treated by simple closure.

Physical Factors in the Production of Appendicitis.

HENRY GRAY (*Illinois Medical Journal*, July, 1925) states that the developmental features should be studied as physical factors in the production of appendicitis. In a large percentage of persons the caecum is much more mobile than is commonly supposed. The undue mobility predisposes to stagnation of the contents of the bowel and the consequent mechanical, chemical and reflex acts of this stagnation are the cause of the majority of the ailments for which the surgeon opens the abdomen. Developmental adhesions or membranes are associated with this condition and very frequently involve the appendix itself or its surroundings. The appendix varies greatly in the position it takes up in the abdomen. A dilated loose caecum and colon are very frequently the cause of appendicitis. When any part of the bowel becomes inflamed either directly or indirectly or by contiguity, its activities usually tend to cease and the affected part becomes unduly dilated. If then an enema is given early before paresis has set in, the caecum empties, tension on the inflamed wall ceases and the excessive strain on the appendix being relieved, the circulation is allowed to proceed more normally. Venous engorgement especially is relieved. Thus the attack gets a chance to subside. The reverse process is brought about by the use of aperients. In the ordinary form of appendicitis constipation is the rule, though of course diarrhoea may be present. The submesenteric position of the appendix is intermediate in causing danger by delay in treatment, but is more likely to cause troublesome complications and sequelæ. Intestinal obstruction is more apt to occur both during the attack and from bands later on. The author does not approve of the rubber

drainage tube as used in the abdomen and he does not use the grid-iron incision. The developmental hesitation of the caecum at the hepatic region and its subsequent irregular descent are responsible for the different types of "membranes" and bands, such as Jackson's membrane. The retrocolic position of the appendix arises from the less rapid descent of the appendix than the heavier caecum. It is advisable when at operation the appendix appears to be normal, to perform a colopexy, if the caecum is unduly mobile. This is best done if a right rectus incision is made.

Elbow Fractures and Dislocations.

IRWIN STRIS (*Surgery, Gynecology and Obstetrics*, May, 1925) has studied one hundred and eighty-one cases of fractures and dislocations in the region of the elbow joint in patients treated at the Bellevue Hospital, New York. All fractures and dislocations are treated as emergencies, a member of the staff being called. The old accepted theory of waiting until the swelling has subsided is erroneous. Swellings caused by lacerations of the soft tissues and extravasation of blood will cease and disappear the sooner the normal anatomical relations are established. Continued pain and muscular spasm retard functional recovery and may be fraught with serious consequences. The procedure in reduction consisted in the administration of an anæsthetic with the patient on a table adapted for fluoroscopic examinations; no attempt at reduction was made until complete relaxation was attained. In supracondylar fractures the forearm in supination was repeatedly flexed and extended so that the fragments were unlocked; traction was then made and by manipulation the displacement was reduced. The position of acute flexion was adopted for all fractures at the elbow except those of the olecranon, as has been so long advocated by Jones. Perfect anatomical approximation of the fragments is not always essential for functional recovery and displacements and overriding of fragments will often result in a good limb. Anatomically restored elbows may be lacking in mobility unless they are treated judiciously. Passive movement and massage may retard progress. Musculo-spiral and ulnar nerve paralysis is not always permanent. *Myositis ossificans* will disappear with the discontinuance of trauma to the *brachialis anticus* muscle. Open operation in children is not indicated.

Conservation of Testis in Repair of Hernia Complicated by Undescended Testis.

ARTHUR GOETSCH (*Journal of the American Medical Association*, July 4, 1925) discusses the problem of undescended testis in conjunction with inguinal hernia. In a series of seven

cases hernia was associated with the undescended testis and not in one of them was it necessary to sacrifice the testis. Strangulated hernia and torsion of the cord occurred in two of the postpuberty patients and strangulation in one patient operated on before puberty. This shows that the possessor of an undescended testis is in a position of no small danger. Malignant degeneration does not seem to be as common as was often taught. Slight atrophy was quite generally noted in the inguinal types, but not in the intraabdominal ones. Even the atrophic testis was generally spermatogenic and it should be preserved for the influence it may exert on the development of the secondary sex characteristics. Replacement of the organ in the scrotum exerts a beneficial effect on the size and consistency of the gland and should be done if possible. Operative interference should be instituted before puberty to facilitate normal physiological development.

The Value of Enterostomy in Acute Intestinal Obstruction.

PATERSON BROWN (*Edinburgh Medical Journal*, December, 1924) describes measures taken in the clinic of Alexander Miles for treating acute intestinal obstruction by enterostomy. Acute obstruction is one of the most serious of abdominal emergencies. During the past year satisfactory results have been obtained by draining the bowel proximal to the obstruction. Especially in small bowel obstruction a toxin is produced, absorption of which cause serious and often fatal complications. This toxin is probably of the nature of a proteose, produced by the action of gastric and pancreatic juices in the duodenum and upper coils of intestine and it is at this level therefore that the toxin is to be found. Not only the toxin itself, but its retention in bowel under tension and dehydration are important factors. From experimental and operative data it is obvious that early operation is essential and that something more than the simple relief of obstruction should be done. Jejunostomy is a most valuable help, as it drains the toxic content from an intestinal canal which has become overdistended and partially or completely paralysed by the toxæmia and which is unable to drive on the contents to the collapsed bowel beyond.

Primary Tumours of the Patella.

W. H. COLE (*The Journal of Bone and Joint Surgery*, July, 1925) has reviewed the literature of primary tumours of the patella and has added a case of his own to the twenty-four authenticated cases already reported. All common tumours of bone have been found in the patella except myxoma. The condition in the author's patient was a benign cyst similar to bone cysts elsewhere, but is the first to be recorded in this situation.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at Sydney Hospital on August 13, 1925. The meeting took the form of a series of clinical demonstrations by members of the honorary staff.

Excision of the Head of the Humerus Following Fracture.

DR. ARCHIE ASPINALL showed a male patient, aged twenty-eight, who had been admitted to hospital on June 20, 1924, with the history that he had fallen off a bicycle on to his right shoulder. He had complained of pain and inability to move the arm together with numbness of the forearm and fingers. On examination the whole shoulder and arm had been bruised and swollen and it had been impossible to form any definite conclusions. The arm had been fixed in a position of abduction with slight lateral rotation.

The patient had been examined by X rays and the report had been to the effect that the head of the humerus lay under the coracoid process and that the upper end of the shaft of the humerus was lying in the glenoid cavity. Three days later the patient had still complained of numbness on both sides of the forearm and on the dorsum of the hand. No weakness of the muscles had been present.

On June 24, 1924, Dr. Aspinall had operated. An incision had been made down the medial border of the deltoid muscle. The muscles had been separated and the upper end of the humeral shaft had been exposed. Several broken pieces of bone had been found in the glenoid cavity and the detached head had been found below the cavity. The proximal end of the shaft had been rounded and placed in the glenoid cavity, the capsule had been stretched over it. The limb had then been put on a Middledorp triangle. The wound had healed by first intention and three weeks later on the disappearance of anæsthesia movements had been commenced.

After a stereoscopic X ray examination had revealed the exact position of the head of the humerus, Dr. Aspinall had operated again on July 18, 1924. An incision had been made in a transverse direction across the axilla and another at right angles to it extending towards the arm. The axillary vein had been exposed and the free head had been found lying below the brachial plexus and in contact with it. It had been freed by blunt dissection and removed. The wound had been closed with drainage.

After an uneventful recovery the patient had left the hospital on July 31, 1924 in good condition. Dr. Aspinall pointed out that the patient's range of movement was satisfactory and that he had considerable power in the arm.

Pernicious Anæmia.

DR. J. MACDONALD GILL showed a patient, aged forty-eight years, who had been admitted to Sydney Hospital on April 27, 1923, suffering from pernicious anæmia. At that time examination of the blood had revealed that the erythrocytes numbered 1,090,000 per cubic millimetre, that the hæmoglobin value was 30% and the colour index 1.5. The white cells had numbered 3,800 per cubic millimetre and of these the polymorphonuclear cells had been 42%, the small lymphocytes 17%, the large lymphocytes 67% and the eosinophile cells 1%.

Examination of the gastric contents had revealed an absence of hydrochloric acid and a streptococcus had been isolated after the passage of a duodenal tube. Treatment had been instituted by the oral administration of dilute hydrochloric acid.

On July 19, 1923, on the patient's discharge from hospital the erythrocytes had numbered 4,780,000 per cubic millimetre, the hæmoglobin value had been 70% and the colour index 0.74.

A test meal had been given on November 14, 1923, and no free hydrochloric acid had been found.

Dr. Gill pointed out that the patient had made an excellent recovery. He was able to lead a normal and

useful life and continued to take hydrochloric acid. A blood count had been made on August 8, 1925, when the erythrocytes had numbered 4,340,000 per cubic millimetre, the hæmoglobin value had been 80% and the colour index 0.92. The leucocytes had numbered 13,500 per cubic millimetre and of these the polymorphonuclear cells had numbered 36.5%, the eosinophile cells 3%, the lymphocytes 59.5% and the large mononuclear cells and transitional cells 1%; no basophile cells had been found. The red cells had been regular in shape, but manifested a slight degree of anisocytosis. Two nucleated red cells had been seen during the counting of two hundred consecutive leucocytes. No free hydrochloric acid had been found after a test meal given on August 10, 1925.

Kala Azar.

DR. L. W. DUNLOP showed a patient who was suffering from kala azar. The report of this case will be published in full in a subsequent issue.

Ulcerative Colitis with Appendicostomy.

DR. H. SKIPTON STACY showed a male patient, aged forty-six years, a labourer, who had contracted dysentery in the Transvaal during the Boer War in 1900. He had suffered from the disease at intervals ever since. He had been admitted to Sydney Hospital in September, 1924, complaining of diarrhoea with the passage of blood and mucus. At that time he had been passing six motions *per diem*. He had complained of severe pain in the lower part of the abdomen especially on the left side. At times he had passed bright red blood.

Appendicostomy had been performed and a catheter had been tied in immediately. About fourteen days later on Dr. Stacy had commenced to irrigate the bowel with about 1.5 litres of normal saline solution twice daily. As a rule it had come through the bowel in fifteen minutes. The patient had been in hospital for one month.

In March, 1925, a *Bacillus coli communis* vaccine had been prepared from the feces as it was the predominating organism. The vaccine had been prepared in a strength of one thousand million organisms per cubic centimetre. An injection had been given every five days; the initial dose had been 0.06 mil (one minim) and this had been increased by 0.06 mil each time. At the time of demonstration he was having a dose of vaccine once a fortnight. Before the administration of the vaccine the patient had been making good progress although he had suffered from occasional attacks. Since the vaccine had been administered the patient had improved still further; he had suffered from only one attack since March. On one occasion the administration of a barium meal had precipitated an attack.

Dr. Stacy said the patient's bowels were moved only when he washed the bowel out with saline solution. He had put on 4.5 to 5.4 kilograms (ten to twelve pounds) in weight. He was wearing a Number 9 Jaques catheter and this was retained by means of strapping. Probably the tying in of the catheter in the first instance had caused some slight ulceration of the mucosa of the stump with subsequent fibrosis and for this reason it was necessary to keep the catheter in place continually. Mummery had said that if a catheter was not tied in, an impaired mucous canal without any tendency to contraction resulted and that the catheter need only be inserted for irrigation purposes. The patient had been working for the previous three months.

Ulcerative Colitis with Caecostomy.

Dr. Stacy also showed a male patient, aged sixty-one years, on whom he had performed the operation of caecostomy in the treatment of ulcerative colitis. During the first week of April, 1925, the patient had become ill with severe diarrhoea and tenesmus. The motions had been very frequent and had been passed about every half-hour. The stools had consisted chiefly of blood and mucus. The attack had lasted three days and a recurrence had taken place in two weeks, but this had not been so severe. The patient had had four attacks in all. Each attack had been accompanied by abdominal pain and much rumbling in the bowel. The patient had lost 12.6 kilograms (twenty-

eight pounds) in weight in two months. He had had indigestion for several years and had not been out of Sydney for forty years.

On examination it had been found that the patient was spare and pallid. Palpation of the abdomen had failed to reveal any abnormality. A barium meal and enema had revealed no tumour or obstruction, but some ptosis of the transverse colon had been found. On sigmoidoscopic examination some small, superficial ulcers which bled easily had been found in the pelvic colon.

On July 7, 1925, Dr. Stacy had opened the abdomen by the usual gridiron incision with a view to performing appendicostomy. He had found the appendix so inflamed on its serous surface that he had removed it and performed caecostomy instead. The serous coverings of the caecum and colon had been very hyperæmic. Several litres of hypertonic saline solution had been injected on the third day after operation, but it had been about a week before the colon was satisfactorily washed out and before the lotion came out of the anus without trouble. On several occasions since then on retaining the lotion some time before passing it the patient had suffered from abdominal distension, pain and vomiting; all these symptoms had been relieved by passage of the lotion. On these occasions the insertion of a rectal tube had not resulted in an evacuation.

Since the operations the diarrhoea had become less, on one or two occasions only had any blood or mucus been passed. After the operation the patient had at first lost weight, but at the time of demonstration he was regaining it. Dr. Stacy said that he had sent the patient into hospital fearing the presence of malignant disease of the colon. The various examinations had eliminated this as a diagnosis and on account of the good result which he had obtained with the other patient shown that evening as a result of appendicostomy, he had determined to carry out the line of treatment adopted.

Microscopic examination of the appendix revealed subacute inflammation and a culture from the mucosa had resulted in *Bacillus coli communis* alone being found. From this a vaccine had been made and the patient was being treated with this in addition to the irrigation. The catheter was kept in the channel by means of strapping. It had come out on one or two occasions and had been soon replaced. On no occasion had there been an escape of faeces.

Fracture Dislocation of the Second Cervical Vertebra.

Dr. Stacy also showed a male patient, aged seventeen, who had been admitted to hospital on December 4, 1924, and discharged on February 7, 1925. The patient had been admitted on account of a fractured mandible. He had also suffered from cuts and abrasions of the face. The knee jerks had been present but sluggish. The pupils had been enlarged and equal and had reacted to light. On December 9, 1924, radiological examination had revealed a fracture dislocation of the second cervical vertebra. Until then this lesion had not been suspected. On January 10, 1925, the patient had been able to move his head freely and without discomfort.

Chorea in an Adult.

Dr. G. C. WILLCOCKS, M.C., O.B.E., showed a male patient, aged forty-one years, who complained of abnormal movements of the face, arms and legs, of difficulty in speech, of loss of confidence, of irritability and of lack of concentration of five years' duration.

Inquiry into the patient's previous illnesses revealed nothing of importance. He had been wounded during the war and had been in a ship which was torpedoed. He had served in both the South African War and in the Great War. In 1919 he had taken up his work in the Customs Department and had broken down on account of jumpiness and inability to control himself. Inquiry into the family history had revealed no history of chorea or insanity.

Dr. Willcocks pointed out that the patient had a swaying, rolling gait. There were almost constant irregular movements of the head, arms, legs and body. These move-

ments were sometimes more noticeable than at others. Dysarthria and slurring of speech were present. The patient was intelligent, his memory was fairly good, but he was slow in answering questions. This was possibly due to hesitancy in speech. He was well nourished and of normal colour. His teeth, throat, heart, chest, abdomen, skin and joints presented no abnormality. The speech was affected. The pupils reacted to light and accommodation. The eye movements were normal; the tongue was unsteady. The fundus oculi was normal. The patient found it difficult to write. Power was apparently normal and no wasting of muscles was present. The sensations to touch, pain and heat were normal. No obvious ataxia of the arms was present and the patient seemed able to control the voluntary movements of the legs except on walking. The arm and leg reflexes were brisk. No ankle clonus was present and the plantar reflex was flexor in type. The blood serum had not reacted to the Wassermann test.

Dr. Willcocks said that the probable diagnosis was chorea. Hysteria and a postencephalitic state could be excluded. The movements were unlike any hysterical movements and there was no history suggesting encephalitis.

Cerebral Tumour.

Dr. W. EVANS showed a patient who was suffering from a cerebral tumour. A full account of this case will be published in a subsequent issue.

Ichthyosis Palmaris et Plantaris.

Dr. NORMAN PAUL showed a boy, aged four years. The palms of his hands and the soles of his feet were covered by thickened, hard epidermic plates. The condition had first been noticed by the mother when the patient was five months old. There was no record or history of any other members of the family being affected. At the border of the area covered by the hypertrophic horny plate there was a slight inflammatory halo.

Multiple Rodent Ulcers of the Face.

Dr. Paul also showed a man who was suffering from multiple rodent ulcers of the face. About a dozen ulcers were present. They were all more or less uniform in size and about the size of a threepenny piece. They were of a somewhat superficial type and had a slightly raised beaded border. The patient was being treated by radium and in several places a reaction to radium could be seen.

Lupus of the Hard Palate and Nose.

Dr. HEDLEY TERREY showed a female patient who had been suffering from lupus for two years. The lesion had commenced on the uvula, it had spread to the soft palate and thence to the posterior wall of the pharynx, from there it had extended to the lower portion of the pharynx. The tonsils had not been affected. The condition had been treated by the electric cautery. The patient had gone back to the country for six months and had returned three months previously. On her return the patient had stated that the lesions were completely healed. Three weeks after her return to the city the patient had consulted Dr. Terrey again. He had discovered recurrence in a few spots in the mucous membrane of the hard palate. From this spot the disease had spread to the outer and anterior part of the left nares. Dr. Terrey pointed out that the points of interest in connexion with the case were the position of origin of the disease, the small inconvenience caused, the slight amount of scarring in the healed parts and the fact that healing had occurred while the patient resided in the back country and recurrence had taken place shortly after her return to the seaside.

Von Recklinghausen's Disease with Pigmentation.

Dr. HAROLD RITCHIE AND Dr. LANGLOH JOHNSTON showed a female patient, forty years of age, who had complained in the first instance of abdominal pain. The pain had generally commenced about a quarter of an hour before meals and had been first experienced six months previously. The patient had vomited occasionally, but had never vomited blood. The vomiting had revealed the pain.

It had also been relieved by the administration of bicarbonate of soda. The patient had not noticed that her stools were black. She had always experienced a feeling of lassitude. She expressed the opinion that she had recently lost weight. The patient had suffered from measles in childhood and from enteric fever fifteen years previously.

It was pointed out that the patient lay in bed in the dorsal decubitus and was not obviously distressed. On examination it was seen that only a few teeth remained in the upper and lower jaws; pyorrhoea was present. The tongue was clean and moist. The fauces were slightly injected. The abdomen moved freely on respiration. Slight tenderness was present five centimetres (two inches) to the right and 1.25 centimetres (half an inch) above the level of the umbilicus. The abdomen was very lax, the vertebral column and aorta were palpable. An area of cutaneous hyperaesthesia was present in the right hypochondrium. Neither the liver nor the spleen was palpable. The bowel was usually constipated. The cardiac apex beat was not visible, but was palpable 8.75 centimetres (three and a half inches) from the middle line. The heart sounds were of good quality, no murmurs were audible. The pulse was regular, its volume was good and both force and tension were moderate. The vessel wall was not palpable. No abnormality could be discovered in either the respiratory or uro-genital systems. The pupils were equal and reacted to both light and accommodation. The knee jerks were exaggerated. Sensation was normal.

The whole body was covered with patches of brownish pigmentation of various sizes interspersed with patches of normal skin. The pigmentation was especially noticeable on the back. Scattered on the legs, abdomen, arms and neck were soft whitish nodules in the skin varying in size from a millet seed to that of a marble. They were freely movable over the deeper structures and painless. The patient stated that the pigmentation had been present all her life, but that the nodules had appeared five years previously and were first seen on the left thumb and then on the feet, legs and abdomen. The nodules were absent on the back, but one or two were present on the buttocks. They had caused no subjective symptoms.

Ano-Rectal Syphiloma.

Dr. Johnston also showed a patient who was suffering from an ano-rectal syphiloma. The report of this case will be published in a subsequent issue.

Amputation of the Foot.

Dr. C. E. CORLETTE described three methods of amputation of the foot each of which conserved the calcaneal tread. He also showed a patient whose foot had been amputated by one of these methods. An account of these operations which were devised by Dr. Corlette, will be found in THE MEDICAL JOURNAL OF AUSTRALIA of June 14, 1919.

Surgical Apparatus.

Dr. Corlette also showed a leg rest for use with conscious patients who were being operated on in the lithotomy position under local anaesthesia. In addition he showed a many-tailed bandage for use with splints in fracture of the leg.

Fractures.

DR. C. E. CORLETTE, DR. GEORGE BELL, O.B.E. AND DR. ARCHIE ASPINALL gave an interesting demonstration on the treatment of fractures in the fracture ward. The methods of extension and counterextension were demonstrated and explained. Various forms of Schmerz hook were shown, its method of application was explained and its use in different types of fracture was demonstrated on several patients. Extension by means of a gimlet inserted through the *os calcis* was also explained and demonstrated.

Hæmolytic Anæmia.

Dr. A. W. HOLMES & COURT showed a male patient, aged thirty-one years, a carter, whose illness had commenced with a feeling of numbness in the hands and feet for a

period of six weeks. This had been associated with discoloration of the skin and conjunctivæ for five weeks. The patient had become jaundiced eight months previously and the attack had persisted for three months. He had been very weak and breathless on the slightest exertion. The skin had not been itchy, but the conjunctivæ were discoloured. He had vomited very frequently and had suffered from severe headaches. He had been treated in the Coast Hospital for five weeks. After his discharge from the Coast Hospital, the patient had continued to do heavy work. He had not been breathless. Six weeks previously, however, the terminal phalanges of both hands had become numb so that he had been unable to button his clothes. The numbness had extended along the medial side of the forearm to the elbow. The upper portions of the arms and the lateral aspect of the forearm had remained unaffected. A similar sensation had been experienced in both feet and this had gradually spread to the knees. The patient's tongue had been painful during mastication for eighteen months. No ulceration or bleeding had occurred, but the tongue had been very red. About one week after the occurrence of the numbness the patient had gradually become yellow and this appearance had persisted. During the latter part of the illness the stools had not become pale, but while the patient was at the Coast Hospital they had been clay coloured. The patient had not vomited and had not been nauseated. No abdominal pain had been present. The patient had not complained of indigestion, his bowel had acted well and his appetite had been moderately good. Micturition had been normal and the urine had not been discoloured. He had suffered from no previous illnesses and denied having contracted venereal disease.

A blood count had been carried out on July 22, 1925, and the following results had been reported: Erythrocytes, 2,100,000 per cubic millimetre; hæmoglobin value, 65%; colour index, 1.54; leucocytes, 6,200 per cubic millimetre. Of the leucocytes neutrophile cells had numbered 43% and lymphocytes 48%. Anisocytosis and poikilocytosis had been found together with many macrocytes and definite punctate basophilia. No erythroblasts had been seen. No material change had been found in a blood count made on August 7, 1925. A delayed direct reaction had been obtained to the Van den Bergh test. Examination of a swabbing from the tongue had revealed the presence of a pure culture of streptococci.

Skiagrams.

An interesting series of skiagrams was shown by Dr. J. G. EDWARDS, Dr. W. A. EDWARDS, Dr. M. J. FRIZELL AND Dr. P. S. PARKINSON.

Apparatus for Anæsthesia.

Dr. C. E. WINSTON demonstrated a gas and oxygen apparatus of a new design for the production of anæsthesia.

NOMINATIONS AND ELECTIONS

THE undermentioned have been elected members of the South Australian Branch of the British Medical Association:

Last, Raymond Jack, M.B., B.S., 1924 (Univ. Adelaide), Adelaide
Johnston, Benjamin George, M.B., B.S., 1924 (Univ. Adelaide), Adelaide.
Goldsmith, Frederick, M.B., B.S., 1889 (Univ. Adelaide), Rose Park.
Tassie, Thomas Wilson, M.B., B.S., 1924 (Univ. Adelaide), Adelaide.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Barclay, Francis Edison, M.B., 1924 (Univ. Sydney), 211, Birrell Street, Bondi.
Corin, Kathleen Ruth, M.B., Ch.M., 1924 (Univ. Sydney), Rowe Street, Eastwood.

- Hotten, William Ivor Townsend, M.B., Ch. M., 1923 (Univ. Sydney), Concord West.
 Jones, Frank Moulton Clifford, M.B., Ch.M., 1924 (Univ. Sydney), Wolseley Road, Mosman.
 Leiper, Alexander, M.B., Ch.B., 1925 (Univ. Glasgow), Strathallen Avenue, Northbridge.
 Rich, Harold George, M.B., Ch.M., 1925 (Univ. Sydney), Pymble Hotel, Pymble.
 Davy, Ashleigh Osborne, M.B., Ch.M., 1922 (Univ. Sydney), Royal Sydney Golf Club, Rose Bay.
 Lane, Muriel Shirley, M.B., Ch.M., 1921 (Univ. Sydney), 20, Kitchener Parade, Newcastle.

Naval and Military.

APPOINTMENTS.

AN announcement appears in the *Commonwealth of Australia Gazette*, No. 64, of August 20, 1925, to the effect that the undermentioned officers have been transferred from the General List of the Reserve of Officers to the Australian Army Medical Corps Reserve List, July 1, 1925:

AUSTRALIAN MILITARY FORCES.

Australian Army Medical Corps Reserve.

First Military District.

Lieutenant-Colonels W. A. Cameron, A. Horn and W. A. Fraser, D.S.O.; Majors S. F. McDonald, J. J. Power, D.S.O., F. T. Wheatland, G. E. M. Stuart, D.S.O., A. J. Kelsey, J. A. Murphy, R. F. Craig, D.S.O., H. V. Foxton, J. Macdonald, O.B.E., L. B. Elwell, M.C., S. Kay, M. G. Sutton, E. E. Brown, H. J. Stewart, A. S. Stewart, A. S. Clowes, T. F. Hall, J. Hardie, M.C., A. V. Meehan, A. M. Langan, J. S. Smyth, J. G. Avery, P. E. Voss, M.C., and A. J. Macdonald; Captains E. R. Row, R. S. Berry, V.D., M. S. Patterson, C. A. Thelander, R. Wallace, N. W. Markwell, J. E. Streeter, P. J. B. Murphy, H. W. Tilling, C. Morcom, W. Crosse, F. G. Power, C. N. Matheson, M.C., S. A. McDonnell, A. J. De S. Howard, N. G. Sutton, A. H. Crowley, R. J. Haynes, A. E. Burke-Gaffney, H. Crawford, H. W. Savage, J. B. Hogg, H. Dolman, P. A. Earnshaw, A. T. H. Nisbet, H. D. Foote, J. R. W. Street, C. Uren, N. J. McDermott, J. A. Shanasy, M.C., T. M. Mansfield, J. A. Goldsmid, W. H. Steel, A. P. Murphy, M.C., C. J. Taylor, S. V. O'Regan, M.C., N. N. Watts, E. Russell, J. W. Blacklock, T. O. Chenoweth, A. B. Steele, H. W. Pottinger, S. E. Wilcox, W. H. Kilner, C. E. Tucker, J. B. Donnelly, E. O. Marks, A. Anderson, V. McDowall, C. B. Deane-Butcher, P. G. McReddie and D. B. Irwin; Honorary Captains H. L. Garde, P. F. V. Crowe and G. W. Smithwick; Lieutenants F. H. Phillips, O.B.E., H. Hudson, H. W. Powell, R. J. Wilkinson, T. T. Ferguson, J. E. B. MacLean, E. S. Martin and E. S. Hobson; and Honorary Lieutenant S. W. G. Rich.

Second Military District.

Colonel K. Smith, C.M.G.; Lieutenant-Colonels H. L. St. V. Welch, D.S.O., A. F. Jolley, A. L. Dawson, D.S.O., C. B. Blackburn, O.B.E., H. S. Stacy, R. G. Craig, R. Fitzherbert, G. Raffan, A. M. McIntosh, H. R. G. Poate, J. Relach, W. E. Grigor, O.B.E., J. R. M. Beith, D.S.O., and J. B. Moore; Majors J. C. Robertson, W. H. Read, J. B. F. McKenzie, G. C. Willcocks, O.B.E., M.C., A. J. Aspinall, J. W. B. Bean, E. K. Parry, M.C., R. J. N. Whiteman, C. V. Single, D.S.O., J. W. Wilkinson, C. K. Parkinson, M.C., A. McKillop, D.S.O., N. M. Gibson, O.B.E., A. J. Collins, D.S.O., M.C., F. Macky, R. E. Jefferis, C. M. Samson, M.C., A. E. Aspinall, E. H. M. Stephen, E. L. Hutchinson, D.S.O., W. J. Connolly, E. B. G. Riley, M. Yuille, E. M. Ramsden, W. T. Newton, A. W. H. & Court, W. K. Inglis, T. R. E. Davis, G. S. Robinson, M.C., C. C. Ross, W. M. A. Fletcher, A. S. D. Barton, D.S.O., S. B. Burge, H. R. J.

Harris, R. M. McMaster, D.S.O., D. J. Glissan, E. W. Ferguson, S. M. O'Riordan, M.C., H. C. E. Donovan, V. W. Savage, D.S.O., E. W. Fairfax, H. M. North, J. T. Jones, M.C., C. C. Corlis, M.C., R. M. Bowman, R. C. Winn, M.C., K. H. Grieve, M.C., R. J. Taylor, E. H. Burkitt, B. Brooke, G. Douglass, F. W. Hayley, J. J. O'Keefe, K. F. Vickery, C. C. Minty, M.C., H. O. Lethbridge, M.B.E., C. H. Wesley, E. C. T. Smith, G. L. Kerr, S. R. Stafford, F. P. M. Solling, M.C., C. N. Smith, R. E. McClelland, A. E. Colvin, M.C., C. S. Browne, A. J. Cahill, A. S. Curtin, I. Morgan, E. P. Barbour, A. E. Machin, A. W. Campbell, J. Morton, W. F. Simmons, E. B. M. Vance, E. N. B. Docker, M.C., H. Rayson, M.C., C. M. O'Halloran, L. H. Hughes, H. L. Tooth, A. Goldstein, R. I. Furber, D.S.O., W. J. Stack, D.S.O., C. H. Shearman, C. J. Wiley, A. P. Drummond, S. H. Weedon, N. K. Robertson, S. V. Appleyard, D.S.O., K. M. Whiting, E. S. Harrison, F. C. Curtis-Elliott, C. Cosgrove, M.C., J. A. James, W. F. Matthews, J. McPherson, H. H. Willis, J. M. Alcorn, E. A. Sanbrook, F. McIntyre, M.C.; Captains W. W. Martin, J. J. Woodburn, James M. Maclean, H. R. Sear, K. R. W. George, F. H. Sabiel, H. G. Humphries, J. T. Paton, F. O. Stokes, A. R. H. McLeod, A. MacInnes and G. Norrie; Captain (Honorary Major) N. M. A. Alexander; Captains A. L. Kerr, C. W. Sinclair, R. Kellas, C. Anderson, M.C., H. G. Leahy, E. W. B. Woods, M.C., L. T. Allsop, M.C., W. K. W. Flook, G. F. Hill, C. P. Rosenthal, S. A. Raiton, M.C., K. S. M. Brown, R. K. Rae, L. J. Hunter, M.C., C. D. Bateman, J. Stewart, J. R. Barriskill, B. M. Beith, H. L. Beale, G. P. Arnold, M.C., R. L. Poulton, D. Wood, A. G. Brydon, C. G. Allen, M. Archdall, C. R. Hodgson, F. C. Thompson, C. A. Mitchell, J. J. C. Lamrock, E. Tyrie, T. G. Allen, E. M. McCaffrey, H. D. Ferguson, S. M. Cordeaux, H. G. B. Bruce, R. E. Nowland, M.C., W. F. Pattinson, A. R. Hudson, Jonathan M. Maclean, G. M. Faithfull, A. J. Hope, T. B. Clouston, G. E. Hobson, F. E. Dawson, W. Broad, F. E. Christiansen, M. J. Frizell, S. E. Paterson, P. A. Morris, W. Wood, C. G. Templeman, R. S. Scott, U. L. Bourke, E. S. Morris, L. Bamber, James Gray, E. Meikle, R. C. Dent, E. E. Pittman, T. W. Van Epen, A. P. Gunning, E. P. Holland, G. M. Whish, B. A. Veech, R. P. W. Francis, R. J. Silverton, G. J. M. Saxby, A. T. R. Robinson, Robert J. Murphy, A. R. Hunt, B. B. Blomfield, D. W. McCredie, M.C., G. C. W. Holmes, O. G. Tunks, T. Y. Nelson, F. N. Waddell, G. H. Pfeiffer, A. M. Luker, J. H. R. McCutcheon, R. J. Hunter, G. M. Hay, J. I. Anderson, C. R. Alexander, A. F. Sutton, M.B.E., O. J. Ellis, R. M. Alcorn, W. F. D. La Touche, O. Latham, P. L. Daniel, W. F. L. Liggins, A. C. Moran, T. E. Marshall, H. C. Barry, J. S. F. Barnett, G. C. Wellish, R. A. Bull, A. Braby, E. V. Bradfield, F. W. D. Collier, J. L. Harrison, J. C. Booth, C. O. Hellstrom, H. S. Thomas, A. S. Cockburn, M.C., M. A. M. Sinclair, W. D. Quilty, M.C., G. A. Lawrance, M.C., P. J. F. O'Shea, D.S.O., M.C., W. S. Hawthorne, F. B. Craig, C. S. Molesworth, J. T. Anderson, N. H. Bridge, A. M. McIntosh, F. C. Dunn, J. F. T. Cunningham, W. M. Amphlett, A. R. P. Henderson, F. G. Hooton, D. S. Hall, W. H. Marshall, O.B.E., O. R. Murray, A. D. Forbes, H. V. Gillies, W. G. Robinson, G. A. Heaphy, C. S. Renwick, A. C. Johnston, R. Roger, H. R. Arnold, G. Bell, O.B.E., A. N. Yuille, A. M. Purves, M.C., C. Badham, F. W. W. Broughton, H. H. Holland, I. Aird, J. M. Rossell, R. M. Allport, F. R. Forster, H. P. Clark, C. W. W. Murray, T. Farranridge, A. E. Clark, W. J. Binns, M.C., H. S. Kirkland, F. E. R. Biggs, P. G. Crago, C. R. R. Huxtable, M.C., M. O. Stormon, B. M. Sampson, D. Christie, C. R. Quinn, A. Douglass, E. O. Watson, G. K. Satchell, C. L. Harvey, R. F. Matters, F. A. Comins, O.B.E., B. B. Ruse, C. M. Cooper, E. L. D. Parry, C. W. Whiting, M.C., H. F. Alsop, C. R. Palmer, F. Howson, L. St. V. Welch, A. C. Smith, G. W. Parramore, E. W. F. Dolman, F. M. Purchas, G. C. Harper, A. W. Bowman, J. Dawson, J. W. S. McKee, L. E. Ellis, I. M. Barrow, M.C., J. G. Hunter, E. H. Loxton, G. L. Tomlinson, F. N. Rodda, J. K. Patrick, N. J. Mackay, M.C., R. H. Leeds,

G. O. Robertson, O. A. Field, R. D. Heggaton, J. H. Hornbrook, R. A. Fox, T. E. Parker, J. R. Drummond, M.B.E., G. R. Hamilton, L. W. Johnston, L. P. Brent, T. de C. Armstrong, W. H. Weston, M.C., H. L. Deck, S. S. Shirlow, W. R. Thrower, G. A. Brookes, J. M. Hair, H. T. Marsh, A. L. Lance, L. R. Scholes, H. G. Howell, A. P. Hines, C. A. Oxley, C. James, F. W. A. Ponsford, J. H. Macarthur and W. Fenwick, M.C.; Honorary Captains R. U. Russell, J. E. F. Deakin, L. R. Parker, H. F. J. Norrie, E. H. Barnes, R. A. Lovejoy, J. H. Paul, J. Coen, A. J. Opie, J. G. Lentaigne, T. L. Pawlett, D. T. Smith and J. A. Lawson; Lieutenants W. G. Masters, S. G. Whitfield, J. M. McLachlan, C. S. Barham, P. J. Heffernan, O. D. Ward, J. S. Binns, J. Braga, P. A. Ryan, F. E. Bland, M.B.E., W. F. Roff, G. Black, A. A. Maloney, A. A. Goodall, T. W. Longville, A. Charlesworth, M.B.E., H. R. Poole, O. Bennett, E. G. Jones, J. J. Boyers, E. J. D. Pye, G. A. Bell, J. E. Craig, G. B. Chapman, P. de M. Seymour-Wells, G. D. Donkin, H. F. Thompson, F. C. Haddan, A. H. Newman, E. A. Lindsay, A. F. Bolton, W. L. Medicott, W. F. H. Smith, M. D. Hunter, S. J. Hogue, V. R. Bellemey, W. W. Luton and L. J. Mobbs; and Second Lieutenant Aubrey Mitchell.

Obituary.

RUDOLPH HERMANN BÖHRSMANN

It is with regret that we announce the death of Dr. Rudolph Hermann Böhrsmann which occurred at Manly, New South Wales, on September 10, 1925.

ERNEST HUMPHRY.

We regret to announce the death of Dr. Ernest Humphry, of Townsville, which occurred at sea on September 16, 1925.

Medical Appointments.

Dr. T. S. Pearse has been appointed District Medical Officer and Public Vaccinator at Tambellup, Western Australia.

Dr. L. M. Corbet (B.M.A.) has been appointed District Medical Officer and Public Vaccinator at Pingelly, Western Australia.

Dr. E. A. Officer (B.M.A.) and Dr. D. Clement (B.M.A.) have been appointed Members of the Midwives Registration Board, Western Australia.

Dr. Albert Curtis (B.M.A.) has been appointed Acting Medical Superintendent of the Hospital for Insane and Receiving House at Ballarat, Victoria.

Dr. Peter Lalor has been appointed Acting Medical Superintendent of the Hospital for the Insane, Sunbury, Victoria.

Dr. Walter Bartlett Chapman (B.M.A.) has been appointed Acting Government Medical Officer at Townsville and Acting Medical Officer to the State Children Department, Townsville, Queensland.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xvi

MOUNT MULLIGAN DISTRICT HOSPITAL, QUEENSLAND: Medical Officer.

ROYAL NORTH SHORE HOSPITAL OF SYDNEY: Honorary Assistant Obstetrician.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies People's Prudential Benefit Society. Phoenix Mutual Provident Society.
	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
QUEENSLAND: Hon- orary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	All Contract Practice Appointments in Western Australia.
WESTERN AUS- TRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	Friendly Society Lodges, Wellington, New Zealand.
NEW ZEALAND (WELLINGTON DIVI- SION): Honorary Secretary, Wellin- gton.	

Diary for the Month.

- OCT. 6.—New South Wales Branch, B.M.A.: Council (Ordinary).
OCT. 6.—Tasmanian Branch, B.M.A.: Council.
OCT. 8.—South Australian Branch, B.M.A.: Council.
OCT. 8.—New South Wales Branch, B.M.A.: Clinical Meeting.
OCT. 9.—Victorian Branch, B.M.A.: Council.
OCT. 9.—Queensland Branch, B.M.A.: Council.
OCT. 9.—Western Australian Branch, B.M.A.: Council.
OCT. 13.—Tasmanian Branch, B.M.A.: Branch.
OCT. 13.—New South Wales Branch, B.M.A.: Ethics Committee.
OCT. 15.—Section of Neurology and Psychiatry, New South
Wales.
OCT. 19.—New South Wales Branch, B.M.A.: Organization and
Science Committee.
OCT. 20.—Tasmanian Branch, B.M.A.: Council.
OCT. 20.—New South Wales Branch, B.M.A.: Executive and
Finance Committee.
OCT. 21.—Western Australian Branch, B.M.A.: Branch.
OCT. 22.—Victorian Branch, B.M.A.: Council.
OCT. 23.—Queensland Branch, B.M.A.: Council.
OCT. 27.—New South Wales Branch, B.M.A.: Medical Politics
Committee.
OCT. 29.—New South Wales Branch, B.M.A.: Branch (Ordinary).
OCT. 29.—South Australian Branch, B.M.A.: Branch.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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